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ABOUT THE JOURNAL

This is a quarterly journal dealing with articles and research findings in various social sciences, developmental strategies and other co-related matters emphasising the problems of the Scheduled Castes and Scheduled Tribes. It also publishes reviews of books pertaining to the aforementioned subjects.

TO THE CONTRIBUTORS

Contributions based on Anthropology, Demography, Economics, Human Geography, Museology, Planning and Sociology with particular reference to Scheduled Castes and Scheduled Tribes are invited. The articles should be type-written in double space on one side of half foolscap paper. Invariably two copies of the articles should be sent. The contributors should also not forget to send their bio-data in a separate sheet along with the article and its brief synopsis. No remuneration is paid to the contributors. Only twenty-five off-prints of the articles are supplied. Two copies of the books should be sent for purpose of review.

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PART I

Strategy for Child Development in Tribal Areas of Mayurbhanj District, Orissa

Rajalaxmi Rath

The district of Mayurbhanj situated in the north-eastern border of Orissa is unique in many respects. It is one of the last ex-princely States to merge into the Indian Union in 1949, after having been under the spell of dynastic rule for nearly nine centuries. The district is claimed as one of the units of the proposed Jharkhand State and has as such witnessed spells of agitation both violent and non-violent for formation of a separate State with contiguous areas of West Bengal, Bihar and Madhya Pradesh. With 58 per cent of its population as Scheduled Tribes, the district has the highest concentration of tribals in the State of Orissa followed only by Koraput (55 per cent) and Sundargarh (51 per cent). In addition to the topographical features like large hilly tracts, dense forests and difficult living conditions, the district is marked by low levels of literacy particularly among females, lack of infrastructure for development, relatively high degree of poverty and unemployment and higher degree of mortality particularly among the infants.

According to 1981 census the total population of the district is 15·81 lakhs, out of which 9·12 lakhs are scheduled tribes and 1·04 lakhs are scheduled castes. With nearly 95 per cent of its population living in villages the district is almost entirely rural in nature. Mayurbhanj district consists of 3,989 villages, which are small, dispersed and thinly populated. Nearly three-fourths of the villages have a population below 500 each and two-thirds of the villages are inhabited mostly by tribal people. Thus, the district primarly consists of a large number of small tribal dominated villages and hamlets.

Whereas, the literacy percentage of the State as a whole is 34 per cent, the literacy among the tribal people of Mayurbhanj is only about 14 per cent. Not only does the literacy vary from tribe to tribe in this district but the picture is dismal and gloomier for many tribes. The literacy is high among the Santals, but it is much lower among the other tribes of the district and is almost nil among the primitive tribes like the Hill Kharias, Mankidias and the ex-criminal tribe—the Lodhas. Almost all the tribes of the State, as well as of the neighbouring States are found in Mayurbhanj. There are altogether 53 different tribal groups found in the district. The Santals with a population of 4·03 lakhs are the single most dominant tribe followed by Kols (1·43 lakhs), Bhumija (0·94 lakhs), Bathudi 0·82 lakhs). Bhuyan (0·42 lakhs), Munda (0·25 lakhs) and Ho (0·24 lakhs). There are twenty tribal dialects spoken by the different tribal groups of the district. Major among the tribal dialects are Santhali, Mundari, Ho, Bhumija, Kui and Oraon etc. Christianity has very little impact on the tribes of the district. Most of the tribal groups came under the tribal religion styled as 'Animism' and practised many Hindu rites and customs due to continuous contact with the Hindu neighbours. However, each tribal community is proud of its own ancestral religious practices also, which vary from tribe to tribe.

Out of the total geographical area of 25·74 lakh acres, about 6 lakh acres are under forests and about 10 lakh acres are cultivable land. The rest of the lands are unsuitable for agriculture. Although there are some activities in such sectors, like mining and quarry, industries and services yet the economy is based predominately on agriculture and forest produce. Over 85 per cent of the people depend upon agriculture as the main occupation, yet it is ironical that majority of such people who depend on agriculture do not possess land and work only as wage labourers. The land is less productive and the farming in the district is mostly for subsistence with little scope for any commercial surplus of agricultural produce. The agricultural holdings are small in area and facility of irrigation in most areas is practically non-existent and as such only one crop is raised per year depending on the vagaries of monsoon. It is estimated that nearly eight lakh people i. e. more than half the total population earn their liveli hood as daily wage earners. Most of such agricultural labourers get employment only seasonally due to the monocropping pattern of agriculture. Unfortunately, even such workers are under employed and get low wages.

The above socio-economic profile of the tribal people of Mayurbhanj must be borne in mind while evaluating any developmental project affecting the lives of the tribes of the district. Many developmental projects have been undertaken in the social welfare sector in the district. Undoubtedly, the Integrated Child Development Service (I. C. D. S.) project is not only the most vital but also the most ambitious project in terms of its aims and objectives, coverage, as well as its far-reaching effects an the physical and mental health of the infant population of the district.

The child is the most vulnerable individual in the difficult and inaccessible areas inhabited by the tribal people. Right from the stage of conception till delivery, as well as for a further period of six years after birth, the child runs grave risks of death or of physical and mental retardation if it survives this critical period. The health of a country's infant population is measured by an indicator called the Infant Mortality Rate (I.M.R.), which is defined as the number of deaths per thousand live births. It is interesting to note that the I.M.R. for developed countries is very low but it is alarmingly high in the poor countries including India. Whereas, Sweden records an I.M.R. of 7, Japan-7. U.S.A-12, France-12, China has an I.M.R. of 70 and Indian has a high I.M.R. of 120—130. The I.M.R. is still higher in the poor and backward districts of the country, where one out of eight babies die before they complete their first year of age. Those who survive are constantly threatened by killer diseases, like diarrhoea, whooping cough, tetanus and deforming diseases, like polio and blindness. Lack of adequate nourishment leads to low body weight and further diseases as well as retarded mental growth.

The child in the tribal areas as well as the expectant mother do not have access to the minimum medical care. On reaching school going age such children are either incapacited to attend school or prefer to drop out soon after joining School.

In order to provide the facilities for basic health care and mental development of the children, the integrated Child Development Services (ICDS) offers them a package of Services under one roof, at one place, by integrating the efforts of various Government and non-Government organisations engaged in the work of child servival and development. In view of the importance and urgency of the scheme, the Government of India have included ICDS in the Central Plan Sector. As a result the funds for ICDS flow from Government of India. The UNICEF have been playing a commendable role in not only advising the Government of India, the State Government as well as the field level organisations but are also providing certain material inputs from their own funds.

According to the scheme of ICDS one project is established in the area of one Community Development Block. The project is headed by the Child Development Project Officer (C.D.P.O.). The focal point of work in the project is the Anganwadi Centre. One centre for an approximate population of seven hundred in the tribal area is established to take care of children in the age group (0 to 6) years and nursing and expectant mothers of the village. The Centre covers an area of one to two villages or hamlets as per administrative convenience. In Mayurbhanj the work of the Centre is supervised by the CDPO with the help of five Supervisors who are put in charge of groups of Anganwadi workers of the Block for close monitoring of the programme at the grass root level. The unique feature of this project lies in the fact that all the functionaries involved in the task of child survival and child development are women and rightly so. Whereas, a CDPO and the Supervisor are full time Government servants, the Anganwadi Worker renders voluntary service on payment of a monthly honorarium.

The Anganwadi **Worker** is the kingpin and the chief architect of this national programme and the success or failure of the programme depends largely upon her dedication, motivation and commitment to the cause of the poor and helpless tribal children. She has to be necessarily a resident of the village in which the centre is established. This is essential to enable her to devote the necessary time and attention for the scheme. Her knowledge of the village folk, particularly the women and children enables her to establish a good rapport between the project and the beneficiaries so that the latter can avail of the facilities to the fullest extent. Her knowledge of the local dialect will also ensure proper communication with the villagers. Although the scheme envisages matriculation as the minimum educational qualification, yet the requirement is hardly fulfilled in the tribal belt because of low literacy among women. More often than not the worker is a non-matric. After selection the A. W. W. undergoes training in various aspects of the scheme to be undertaken at the centre. She is assisted by another female helper also of the village to perform the menial work of the centre. The centres run from 8 A. M. in the morning till 12 noon every day except on Sundays and a few national holidays.

In order to ensure the all-round physical and mental health and development of the child the following services are provided to them at the centre.

1. Nutrition to the Children and Mothers :

Malnutrition coupled with low body weight is endemic in the tribal belts due to general poverty of these tribal people. Malnutrition leads to diseases, which in turn leads to further malnutrition. To break this vicious circle of malnutrition and diseases the scheme provides a nutritious diet to the beneficiaries everyday at the centre. In Mayurbhanj district, food made out of Corn Soya Blend (CSB) and Butter oil gifted by CARE is provided for in all the centres. The worker maintains a growth chart in a graphical form for every child and monitors the increase of body weight of the child with the passage of time. If the body weight of a particular child falls below the prescribed level of weight in the graph then the case is considered to be critical and is referred to the Auxiliary Nurse Midwife (A. N. M.), Medical Officer of the Block for treatment to prevent the child from slipping down further in morbidity. Similarly expectant mothers and nursing mothers are also provided with nutrition so that the foetus develops properly and a normal child with a proper body weight and growth is delivered. The nutrition not only ensures the health of the expectant mother but provides for extra nutrition to the nursing mother for breast feeding the child. The meal is actually cooked in the centre everyday in the morning by the helper who tries to get firewood and other ingredients by contributions from the villagers.

2. Immunization :

The child must be protected against the killer diseases right from the foetal stages. As such, the first step of immunization begins with the expectant mothers. Since medical services in the tribal belts are too poor and inadequate and the people are ignorant about proper health care, the I. C. D. S. programme aims at covering all the expectant mothers for immunization against tetanus. This not only protects the new born child but also the mother. After birth the first year of the child is very critical and there is grave risk to its life from various killer diseases, like tetanus, whooping cough, measles, diptheria, typhoid and tuberculosis as well as retarding diseases, like polio and blindness. To protect the child in the initial years of his life particularly in the age-group 0—1 years, immunization services against the various diseases are provided at the centre according to a fixed time-table. Immunization cards for the concerned child/mother is maintained at the centre by the worker and immunization is provided to every body by bringing the vaccine from the District/Block hospital to the Centre.

3. Pre-School Education :

Children in the age-group 3—6 attend the pre-school, non-formal education in the centre daily for three hours. There is no fixed or rigid alarning curriculum. Children are taught folksongs, nursery rhymes, action songs and group games. Inexpensive and locally made toys, sketches are provided to them. The objective is to provide stimulus to the child for his mental development and to encourge him to learn on his own, so that he can join the school subsequentely and continue to receive formal education. This will also stop him from losing interest in school and prevent large scale school drop outs as found in the tribal and rural areas. On demand of the parents, alphybets and elementary numeracy is also taught to the children in the Anganwadi.

4. Nutrition and Health Education:

All tribal women in the age-group of 16—45 years are given training on proper dietary habits and health care of the family Particular emphasis is given to the training of nursing and expectant mothers while importing such education. The approach of such training is informal, flexible and personalised. The Anganwadi worker has to display great deal of skill and imagination in handling the tribal women who may not have enough time or interest for such training. The messages of health and nutrition are imparted to them through several methods at the centre when the women come for receiving their quota of supplementary nutrition (C.S.B. Meal). Moreover, the Anganwadi Worker visits their homes at suitable time if they cannot come to the centre for various reasons. Moreover, other methods of mass communication, like special compaigns, informal gatherings of women, audio-visual presentations and use of mass-madia are also employed to disseminate information to them.

5. Health Check Up and Referal Services

Ante-natal chack-up of expectant mothers, post-natal check-up of nursing mothers and health check-up of the children particularly in the 0-1 year age-group is arranged periodically at the centre. Iron and folic-acid tablets are supplied to the mothers in these tribal areas. Since most of the deliveries in the tribal belts take place in the home, at least two to three home visits by the ANM and AWW are arranged to take care of the mothers and infants. The weight of children is taken at periodical intervals in the centre to keep a watch on their growth and individual cards are maintained. General health check-up of children, once in three months is undertaken at the centre, to detect diseases, malnutrition, worm infestation, vitamin defficiency and anaemia. Vitamin A Capsules are administered to the children to prevent blindness. Other necessary drugs are also provided either out of the medicine kit available at the centre or from the Block headquarters. If a child shows high degree of malnutrition/anaemia or suffers from any serious illness on diseases his case is referred to the Primary Health Centre or the district Hospital. Follow up action is taken by the ICDS personnel in all such referred cases.

The ICDS scheme was introduced in Mayurbhanj district for the first time in the year 1981, with the launching of three projects in the tribal dominated Blocks of Jasipur, Muruda and Shyamakhunta. Within a decade the results of these three projects have promoted the Government of India to extend the scheme in as many as 15 out of 26 Blocks of the district by the end of 1991. In fact, ICDS scheme has now been sanctioned for the remaining 11 Blocks also. As such, by the end of 1992-93 the entire district will be covered under ICDS with the assistance of World Bank. This only indicates the high priority being attached to the scheme at all levels. In the year 1991 the total number of beneficiaries in these areas of the district stood at 1,41,000 in 2,989 centres of 15 Blocks. These beneficiaries included 119,640 children (0—6 years), 12,035 nursing mothers and 9,325 expectant mothers.

Needless to say, the scheme of the ICDS is a bold, ambitious and imaginative programme with far-reaching consequences on the health of the future citizens. The programme promises to bring a package of services and facilities to the door-step of the tribal child and the mother. The services planned under the scheme are comprehensive, ideal, modern and innovative, which could be the dream of any family. But after seeing the scheme at the grass roots one cannot help feeling that the ideals of ICDS are too high and unrealistic in the given conditions in the field. One wonders if the philosophy of child development as enshrined in the aim and objectives is not too lofty and unrealistic. It will be worth-while to elaborate the above observations with some illustrations and examples.

(i) As per the policy of the Government the ICDS project started in the most backward area on a priority basis, in other words the services are promised in an area which lacks the basic infrastructure of development. In most of the project areas under study there is hardly any sign of development. These areas suffer from lack of infrastuctural facilities, like communication, transport, electricity, housing, drinking water, business or other commercial activities. The areas are mostly dependant on rainfed agriculture, which barely supports the population for the whole year round. In this backdrop it is extremely difficult, almost impossible to fulfill the ambitions objectives of ICDS.

In hamlet Matiagada nearly forty Hill Kharia families have been settled by providing them with one roomed houses and a few facilities. The population of the hamlet is a little above two hundred with about twenty to twenty-five children in the age group 0—6 years. This hamlet has been covered under ICDS by Jashipur project, by tagging this hamlet to the main Matiagada Centre, which is three to four kilometres away. It is a daily task thrust upon a group of child beneficiaries to carry the cooked C. S. B. Meal from the centre to their hamlet in buckets over a distance of three kilometres. After arrival of the cooked food in the hamlet all the children assemble in a circle and hungrily eat the food served to them. This is the only "service", which ICDS is able to offer to them at present, in addition to some stray and occasional visits of some health workers. The children look lost, gloomy and unhealthy.

The services of ICDS are not available in remote and inaccessible pockets. A group of about thirty Lodha families have been settled in village Chiktamatia under Muruda Block, which has been covered under ICDS Chiktamatia is about ten kilometers from Muruda and is tagged to the nearest ICDS Centre, which is three to four kilometers away. Although there are some children in the ICDS age group yet they are deprived of services because of the distance from the nearest Anganwadi centre. The parents of the children of the Lodha hamlets find it very difficult to send their children to such distant centres. Similar is the pictures in respect of the Lodha settlement colonies at Sansasol as well as the Hill Kharia settlement colony at Kumdabadia and Mankirdia hamlet at Durdura. In these above hamlets the Government have settled the primitive tribes, like the Mankirdias, Hill Kharias and ex-criminal tribe, like the Lodhas, yet the children of such hamlets do not have access to the benefits of ICDS except in a marginal way, although they are among the most deserving groups. Similar is the fate of the children living in the tribal hamlets scattered inside the Similipal forest areas. People belonging to the Kolho, Ho as well as Santhal tribes have settled in a number of hamlets bordening the dense Similipal forests, but their children are deprived of benefits under the ICDS.

This above belt of isolated hamlets is not exhaustive but only illustrative to highlight the weakness of the scheme. It is, therefore, necessary to reconsider the yardsticks and criteria for establishing the Anganwadi Centres. There is a strong case for making the operational area of one centre still smaller in such inaccessible and isolated pockets so that the full benefits are available to the tribal children and mothers uniformally all over the district of Mayurbhanj. It may involve higher expenditure but it is better to have a scheme which benefits all instead of leaving out sizeable and disadvantaged groups of population.

(*ii*) As stated earlier, the Anganwadi Sebika is the king-pin of the project. Much of the success depends on her work. After observing some of the Sebikas at work in different places in Mayurbhanj it appears that the Sebika is over-burdened with enormous responsibilities and under-equipped with skills and facilities to discharge her heavy responsibility. Due to low literacy in tribal areas most of the tribal girls who join as AWW are non-matric having read up to Middle School stage or slightly above. Although they are generally keen and dedicated yet, it is unfair to expect them to run such a comprehensive scheme, like the ICDS. The Sebika has to keep the accounts, maintain the growth chart of each child in the prescribed graphical diagram, act as a health and family planning worker, understand child psychology and play the supervisory role for the tribal children and mothers. The ICDS scheme expects rather too much from the Sebika but she does not get adequate remuneration for her work. Her education, background and training are not adequate to perform such tasks, assigned to her. As such, there is a need to assess and evaluate the personnel policy and the pay structure of the Sebika in view of her duties and responsibilities. At the same time it is true that increasing the qualification and pay structure of the Sebika will involve greater financial burden on the scheme but there is no alternative. If the services under the ICDS are to be made effective more money on the key functionaries will have to be spent.

(*iii*) Nutrition is not only a very important but also an attractive component of the ICDS. After visiting many centres and talking to the children and their parents one gets the feeling that this is the most popular aspect of the scheme. Attendance in the centre remains high as long as nutrition programme continues, but it is observed that the food is not provided round the year. In Mayurbhanj district, cooked food made out of Corn Soya blend and Soyabean oil gifted by CARE is provided to the tribal children in the Centres. But often there are interruptions in supply of food materials due to various reasons including delays in receipt of imported food materials at the Paradip Port and subsequent transportation. Whenever food is stopped there is a marked decrease in the attendance in the pre-school classes. As such, it is absolutely necessary to ensure uninterrupted supply of food materials at the centres. In case imported food does not reach in time, necessary provision may be made in the ICDS budget to provide indigenous and locally avaiable food to the children like *'Khichri'* made out of rice, dal and vegetables. In fact, it was observed in many centres that children do not like food prepared out of imported CSB, but always want to have food like *'Khichri'* which is close to their food habit. Therefore, as a long term planning the imported food should ultimately be replaced by local food.

(*iv*) Children in most of the Anganwadi centres have received some vaccination or the other. This is reflected in the registers maintained in the centres. Moreover, the children are also apprehensive whenever some vehicle with visitors land at the centre for they confuse the visitors with vaccinators. In fact, they speak out exactly in so many words that they are scared of injections. However, the frequency of vaccination is not strictly adhered to due to delay in despatch, non-availability and sometimes indifference of the health workers. There is a more serious aspect to the vaccination programme. In the tribal belts eletricity is not available continuously, therefore the cold chain prescribed for storage and transportation of the vaccines is not always maintained. As a result, one doubts the efficacy of the vaccines in some cases. Although an improvement in the power situation in the tribal belt cannot be brought about overnight yet, efforts may be made to evolve alternative strategies to improve the situation.

(*v*) The success of the ICDS programme depends to a large extent on peoples' participation in its activities. The programme cannot bring about improvement in the quality of life of the children and mothers if it remains only a programme by Government agencies and does not enlist the support and participation of the community. Although one finds certain awareness amongst he parents around the ICDS centres of the district, yet, the kind of community involvement and participation as envisaged in the scheme has not yet taken place in Mayurbhanj district. Of course, one can ascribe it to illiteracy, general poverty and ignorance yet, there is need for greater effort to enlighten the villagers about the benefits of the programme constantly and regularly. However, all efforts must be made to involve the voluntary social service organisations in the field of child development. This will not only augment the official resources of the programme but will also increase peoples' participation in the scheme.

(*vi*) The scheme also expects the people of the villages to contribute materially for some of the services of the programme, like provision of free house for the centre, donation of fire-wood for cooking the food in the centre, donation of vegetables, jaggery, sugar, salt, condiments as well as toys for the centre, but such community donations are practically non-existent. At many centres the tribal people pointed out their poverty and inability to contribute any thing except by way of physical labour, when they are out of employment. Perhaps they are right and it is pointless to expect anything tangible by way of community donation for the scheme.

(*vii*) In the pre-school classes the children are taught nursery rhymes and action songs. All these teachings are done in Oriya language out of books prescribed for the purpose. It was observed in a number of centres particularly in the interior tribal belts that the children practically do not understand oriya but know only their own tribal dialect. They mechanically learn the action songs and haltingly repeat as directed. In Anganwadi centre, Kukuda Khumpi in Kuliana Block, which is hardly 3-4 kilometres from the national highway the children could neither understand or speak in Oriya and were in great difficulty reading oriya poems. Such predicament of the children was observed at some other centres also. It is advisable to introduce some folk songs in the local tribal dialect in addition to the oriya songs for better mental development of the child. The Sebika should be encouraged to introduce such innovations. At many centres the Sebikas felt that a certificate about attendance in the pre-school should be given to the children attending the centre. This will not only encourage the children and the parents but will also prevent drop-outs if such certificate is made compulsory for admission in the regular schools. This suggestion is worth considering and will also improve the co-ordination between the pre-school education and school education.

ICDS is expected to contribute to the success of the family planning programme. By better maternal and child health facilities of the scheme the survival rate of the child will go up and result in reduction of the Infant Mortality Rate (IMR). One of the basic causes of a large family in these areas is due to the high Infant Mortality Rate. By ensuring the longevity of the child and a better quality of life for him the ICDS programme boosts up the family planning programme. Of course, the effect is not perceptible immediately but requires a sustained endeavour, follow up action, publicity and extension work. Undoubtedly, there is a growing awareness among the tribal couples to give a better quality of health and education to the children yet, one finds lack of proper tie-up between I.C.D.S. and family welfare programmes at many places in the district. There is a need to improve the co-ordination between the two prgrammes at the field level.

The above analysis would reveal that the scheme of child development has made its impact felt in the tribal belts of Mayurbhanj district during one decade of its performance. Undoubtedly, it is a scheme, which the country cannot ignore at any cost. Infact, it is quite revolutionary in its approach, since, it attempts to utilise the zeal and energy of educated tribal girls in the process of human resource development. It is perhaps the only programme being run entirely by women for the benefit of women and children in a comprehensive manner. The die is cast and there is no going back. The child must be saved and developed fully both in body and mind. There is ample scope to improve the services under the scheme and introduce innovations for its better performance. Our plan must be designed to provide all the costs necessary, in this field and the Nation must be prepared to pay any price for child survival and development particularly among the disadvantaged groups, like the tribal people. The children of Mayurbhanj district should be nourished and developed properly so that this backward district may progress and prosper. The children of Mayurbhanj should not fall behind the national goal of health for all by 2000 A. D.

Nearly 40 Asian-Pacific countries representing more than half the population of the world met at Jakarta in 1988 and unanimously formulated a comprehensive plan of action as guidelines for human resources development. One of the main recommendations of the Jakarta Action Plan is reproduced below :—

> "In view of the importance of the formative years of childhood in determining the future quality of human resources, policy makers and planners should take full account of the influence of all relevant economic and social factors on child development so that the best possible results. can be ensured by the formulation and implementation of such policies and plans".

Three decades ago the General Assembly of the United Nations in their resolution on the Rights of the Child declared that "mankind owes the Child the best it has to give". The Directive Principles of the State Policy of the Constitution of India solemnly directs the State to make all endeavours for the protection and development of the child. In August 1974 the National Policy Resolution of the Government of India declared "the Nation's Children are a supremely important asset. Their nature and solicitude are our responsibility".

It is high time these lofty ideals are translated into practical actions to help the child. The life of the child is in peril and time is running out. The entire nation must join hands to ensure a better quality of life for the children. Needless to say the tribal areas of Mayurbhanj must receive top priority in the national policy for the protection and development of the child.

REFERENCES

1. Manual on Integrated Child Development Services ; 1984 : National Institute of Public Co-operation and Child Development.
2. Profile of the Child in India—Policies and Programmes, 1980 ; Ministry of Social Welfare, Government of India, New Delhi.
3. The State of the World's Children ; 1987 : United Nations Children's Fund ; Oxford University Press.
4. Integrated Child Development Services Scheme (Revised) : 1982 : Ministry of Social Welfare, Government of India.
5. Future—Development Perspectives on Children 24-25 : 1988 ; UNICEF : Thompson Press India Limited.

Didayi & Their Development

Sarat Chandra Mohanty

"Didayi" means wild people. They are a small primitive tribe almost unknown to the world outside. They inhabit the remote hill tracks inside mighty Kondakamberu ranges of the Eastern Ghats in Malkangiri Subdivision of Koraput district. They speak an ancient dialect like those of Bonda, Juang and Soura, that is linguistically classified under the Mundari branch of Austro-Asiatic sub-family of Austric family.

As a tribe the Didayi is numerically very small. Their total population does not exceed 4,000 individuals. In 1941, their population was 1,661 in Orissa which rose to 1978 in 1961 registering an average annual growth rate of less than 1 per cent. It increased to 2,164 in 1971 indicating the same lower growth rate as against 2 per cent for the total tribal population of the State. In 1981 census, their population declined to 1977 only showing a negative growth rate of 8·6 per cent. This declining trend appears to be controversial because according to a survey conducted by the Tribal & Harijan Research-*cum*-Training Institute, Orissa during 1982, the Didayi population is 3,994 comprising 1,982 males and 2,012 females who are confined to 42 villages in Kudumulguma and Khairput Blocks.

They have a very low rate of literacy, i. e. 2·72 per cent in 1961 and 0·78 per cent in 1971. In 1981 their literacy level rose to 3·2 per cent as against 13·96 per cent for the total tribal population of the State.

Most of the Didayi villages are found on the hill slopes and the Machkund river valley. As such their geographical isolation have helped the community to grow and preserve their traditional culture with least interference from the modern world. They derive their subsistence from podu cultivation, hunting and food gathering. Their hill settlements are smaller in size varying from ten to twenty-five households.

A small section of the community have come down to the plains and settled down in larger villages adopting low land agriculture. They are a step ahead of their hill living counterparts. Their close proximity to the modern world and regular contact with the Government welfare agencies have made them socio-economically advanced by availing the benefits of development schemes and infrastructures like school, road communication, bank, medical centre, weekly market, drinking water and tube-well, etc.

The Didayi villages comprise houses scattered here and there. The area around the house is enclosed within bamboo wattle fencing. This implies an individualistic housing pattern. "Gulisung" the communal place for conducting the dances, ceremonies, village meetings is located at a central place. Didayi houses are rectangular shaped having mud walls and floor and grass (piri) thatched roof. The spacious verandah infront is an unique feature as it serves many purposes like husking grains, sleeping and entertaining guests. The main house is single roomed. The interior is functionally divided into three parts—kitchen, store and living. The remarkable feature of the house is the attic made of bamboo approached by a bamboo ladder. It serves as a general store room for storing grains and food-stuff in large baskets. The pigsty and cattle shed are separetely built within the campus. Each house has its own kitchen garden where, pumpkin, gourds, maize, chillies, tobacco leaves are grown. The house and its sourroundings are genarally kept neat and clean. The house in plain villages are larger in size than those in hill settlements.

The Didayi earn their livelihood from agriculture, hunting and food gathering. The hill Didayi persue shifting cultivation to grow crops such as Maize, Millet, Kandul, Niger, Ragi, Blackgram, Beans, Brinjal, Tomato, Chillies, etc. The plain Didayi have adopted plough cultivation. They grow paddy, Ragi, maize, blackgram etc.

Hunting and food gathering in the forest are done in all seasons, except the busy rainy season. A veriety of fruits, roots, leaves and tubers are collected for consumption. The surpluses are sold in weekly markets. Collection of "Mohul" flower during summer season provides them a gainful pursuit. Didayi men take advantage of leisure especially during festive occasions like famous "Chait Parab" to hunt in groups. The weapons of hunting are simple bow and arrow, knife and axe. At present reservation of forests, deforestation and restrictions on hunting have put a check on their age old hunting activities.

Didayi rear animals like cattle, pig, poultry birds and dogs. Plains Didayi use cattle for ploughing. They donot use cow's milk but take eggs. The pigs and fowls are sacrificed in rituals and the meat is consumed.

The bomboo available from the forest are used for housing, wattle fencing and basketry. They prepare bamboo products like various kinds of baskets, mats, winnowing fan, etc. which they require for regular household use.

Rice, Ragi and Millet constitute staple diet of the Didayi supplemented by vegetable, dry fish, meat, eggs and a variety of seasonal fruits, roots, leaves and tubers either grown or collected from jungle. Few simple items from rice and ragi and their gruels are Prepared and eaten daily. Tamarind, chillies, salt and turmaric are used for making vegetarian and nonveg dishes. Meat of pig, fowl or of the hunted animals are roasted and taken during festive occasions. The Didayi eat thrice daily-morning, noon and evening. They are addicted to Mohua arrack and Salap juice. A kind of ricebear called "landha" is also prepared and consumed by them.

There is nothing special about the dress an ornaments of the Didayi. In the past the women were wearing "Kisalu" a self-made skirt. It is an unstitched clothing made of bark fibres and thread, like the hand woven "rings" worn by Bonda women. It was being tied around the waist to cover tha lower parts of the body while the upper parts remained uncovered. But now, the popularity of coloured cotton sarees and blouses available in weekly hats has replaced the traditional Kisalu. Didayi women are fond of wearing ornaments of silver, aluminium, gold, brass and beads, Wearing nose rings is compulsory for married women. Men usually put on a small loin cloth. Now they have started wearing, dhoti, shirt, banions, etc., Keeping of a well-built body and a neat and clean body in their characteristic simple manner is a remarkable feature of their personel hygiene.

The structural organization of Didayi society is characterised by moiety and totemism. The whole society is divided into two exogamous segments or moieties composed of totemic groups or clans. There are 5 exogamous totemic groups or clans called "Gta" or "Bonsa" namely Nkhoo, Mala, Giboo, Muali and Goi. The Nkhoo Bonsa constitutes one moiety and the other moiety is constituted by the remaining four "Bonsa". Each "Bonsa" has its own legend to tell their relationship with the totemic ancestor. The Didayi rarely worship their totemic animals but avoid to kill or injure them. The clan or "Bonsa" comprises several lineage groups. Consanguinal kins of patrilineally related families in a village from one lineage ("Brea").

Didayi family, the smallest basic social unit, is nuclear and patriarchal. In nature It is mostly a family of man, his wife and unmarried children. Sometimes, divorced or unmarried brothers and sisters, dependent old parents are included in the family. However, married sons leave their family of orientation to start their own family of procreation within a year of their marriage. Family members form a closeknit group to struggle against the physical environment and earn the livelihood. Women excrcise a dominant influence over household affairs, by virtue of their significant contribution for the very survival of the family. Children are born and brought up in a very congenial atmosphere. They grow up while helping their parents in all subsistence activities. Succession and inherritance of property is strictly patrilineal.

The institution of marriage is the most cherished and most significant social event in Didayi life. Adult marriage and monogamy is the common practice. It is done more by mutual choice and love between the boy and girl than by parental interference. Didayi boys and girls enjoy total freedom for selecting their mates and so, most of the marriages are love marriages. The marriage season is between February and June. Like other tribal societies the bride-price is pai by the boy's family to the girl's family. The bride comes to the groom's house for the wedding ceremony which is celebrated pompously with dancing, drinking and feasting.

Widow marriage, levirate and sorrorate are permitted in Didayi society. Divorce, separation and remarriage of either of the spouses are also permitted to end unhappy marital life. Only the husband has the right to divorce his wife formally. On the otherhand, the wife can desert him or elope with her lover forcing her husband to divorce her.

The Didayi perform elaborate death rites. They cremate the dead body. In case of abnormal deaths caused by pregnancy, child birth, disease, accident and attack of wild animals, the dead bodies are burried immediately. The whole village observe mourning on the day a death takes place and any kind of subsistence activity is totally banned. The purificatory "Dasah" rites are observed on the 10th day in which the villagers and the kith and kin are entertained in a grand feast.

The Didayi are custom-bound and peace loving people. They believe in peaceful coexistence and maintain well-defined cordialties with their neighbours including the aggressive "Bonda". Social control and conformity are effectively ensured in their social life. Their autonomous political system of the past have declined in these days. Village is the only political unit that has survived the test of time. The Didayi village is autonomous, independent, and self-sufficient having full access to its assets and resources including exclusive ownership rights to the land and forest. It is a co-operative and corporate body functioning through its own agencies and arrangements.

It is managed by a traditional village panchayat called "Lopar". The village headman "Naik"., his assistant "Challan" and the village priest "Palasi" provide leadership to the panchaya composed of the household heads. It sits in various occasions to settle disputes, fix up dates for communal rituals and deal with other routine and emergency issues. The Naik presides over the meetings.

The office of Naik is hereditary in practice. His functions are important because he is responsible for maintaining peace and good will in the village, executing the decisions of the panchayat and especially, communicating the grievances of his villegers to the Government officers. In these days with superimposition of panchayatiraj system at the village level the wardmember has become an important figure.

Time is changing fast. The Didayi cannot remain away from it. The process of modernisation and social change is more rapid in case of plains Didayi and less so far their hill living brethern, who are still primitive and backward. Their low level of literacy, techno-economy and physical inaccessibility have kept them barely at subsistence level. Hence, they have been declared as "primitive tribe" by Government of India. A Micro-project named the "Didayi Development Agency" has started functioning at Kudumulguma since September 1986.

DIDAYI DEVELOPMENT AGENCY

This Micro-project was constituted vide Government of Orissa, Harijan & Tribal Welfare Department Resolution No. 23449, dated the 5th August 1986. With a view to adopt a flexble approach and ensure speedy implementation of time-bound development programmes for the Didayi tribe, the Micro-project was constituted as an Agency which was registered as a society on the 7th October 1986 under the Societies Registration Act of 1860. The Governing body of the Agency was formed under the Chairmanship of Collector, Koraput with the Project Administrator, Malkangiri ITDA as Vice-Chairman and various District level officers, local public representatives as members in order to formulate, monitor and review the action programmes from time to time. The first meeting of the Governing Body was held on the 3rd March 1987 to decide the coverage and initiate the functioning of the Agency by formulating an integrated action-plan.

At first, Government decided to locate the headquarters of the Agency at Bayapada. Bayapad is a hill-top Didayi village lying at the heart of the mountainous Didayi country at a height of 3000' from the sea level. It is 10 Kms. away from the Kudumulguma block headquarters and almost inaccessible in the sense that there is no road to reach the village by climbing 5 Km. of steep hills through dense reserve forests of the mighty Kondakamberu ranges. Due to the lack of minimum infrastructures such as roads, buildings schools, banks, postal services in this remote Didayi village, the Governing body in its first meeting proposed to change the headquarters of the Agency from Bayapada to another plain Didayi village, Purunaguma located near Kudumulguma block headquarters. At present the office building and staff quarters are being constructed at Purunaguma and till then the Agency is temporarily functioning at Kudumulguma.

As per the Survey conducted by the Tribal and Harijan Research-*cum*-Training Institutes, Orissa, in 1982 for the purpose of preparation of the project report for Didayi Development Agency, there are a total number of 42 Didayi villages located in a contiguous pocket under the jurisdiction of 6 Grama Panchayats namely, Rasbeda, Andrahal and Govindpali of Khairput Block and Kudumulguma and Muduliguda of Kudmulguma Block in Malkangiri Sub-division of Koraput district. The total Didayi population and total number of Didayi households in these 42 villages are 3,994 and 990 respectively. Four of these villages namely Patraput, Khalguda and Sindhiguda coming under Andrahal G. P. and Khalguda in Govindpali G. P. of Khairput block have not been included under Didayi Development Agency as the first three villages have already been covered under the neighbouring Micro-project, Bonda Development Agency and the last one is located far away from Didayi Development Agency. Thus, the remaining 38 Didayi villages i. e. 36 villages of Kudumulguma block and 2 villages of Khairput block are covered under Didayi Development Agency. The total population of these 38 villages is 3,654 (1,826 males and 1,828 females) comprising 897 households, as recorded in the Survey.

These villages are located in and around the mighty Kondakamberu range of the Eastern ghats. On the eastern side of the mountain range lies the plain valley of the river Machhkund at an altitude of 1,500'-2,000. Didayi villages namely, Mudulipada, Orapadar, Bhejaguda, Totaguda, Sanyasiguda, Jantri, Dhakadpadar, Dabuguda, etc. are scattered in this valley. After construction of the Balimela reservoir, most of these villages now have become inaccessible as they lie in the cut-off area of the reservoir. Many Didayi villages are found in the mountainous region at an altitude of 3,000' to 4,000. These villages are, Bayapada, Suripada, Gangapada, Tikarpada, Damdarbeda, Ghisingbeda, Bodkiaguda, Bataguda, Kaningi, Naringjhola, Amblibeda, Khajuriguda etc. On the western side of the mountain range lies undulating plains at on altitude of 1,000. Some Didayi villages namely, Oringi, Muduliguda, Chilipadar, and Purunaguma are found in this area. These villages are located near the Kudumulguma block headquarters and the main road connecting Jeypore town with Balimela and Malkangiri. Because of their proximity to modern infrastructures like road, school, bank, weekly market, post Office etc. and exposure to the agencies of modernisation, the Didayi inhabiting these four villages are relatively more advanced and modern than their hill-living counterparts. Only these four villages are approachable by jeep through fair-weather roads.

At the outset, the Micro-project lacked necessary resources such as funds, manpower and infrastrctues to cover all the Didayi villages for the purpose of development. This issue was discussed in the first meeting of the Governing body held during March, 1987. It was decided that the Didayi villages would be covered in a phased manner and in the intial phase seven villages viz., Purunaguma, Chilipadar, Muduliguda, Oringi, Bayapada, Suripada and Tikarpada would be taken up. These villages are comprised of 310 Didayi households which is 30 per cent of total Didayi households (990) of the project area. Subsequently in the 3rd Governing Body meeting held on the 22nd July 1989, it was decided to cover another 10 Didayi villages in addition to the existing 7 villages. Thus a total number of 17 villages out of total 38 villages have been covered by the Micro-Project within a span of four years.

The Agency is implementing various development schemes for the benefit of Didayi. Importance is being given to improve their living standard by modernising and promoting their traditional land based subsistence economy and also by upgrading the traditional skills. For promotion of agriculture, cultivation of high yielding variety of crops such as paddy, ragi, blackgram, maize, groundnut, soyabin, wheat, mustard, turmeric, etc., have been introduced. Use of chemical fertilizers and pesticides to boost agricultural production is slowly gaining acceptance. Utilizing the land for a second crop during winter where irrigation facilities are available is being demonstrated to them. During 1988-89 Rabi season, 12 Acres of wheat and 4 acres of mustard have been successfully cultivated by motivating the Didayi farmers of Oringi village. They have got a good harvest and derived extra income by selling the produce. This has brought a demonstration effect by building awareness and motivation among those who have not participated in this scheme. 300 Didayi households have been benefited under this scheme during 1987—89. Modern agricultural implements like M. B. Plough, pick-axe, spade, crow-bar, etc., have also been supplied to 300 Didayi farmers with a view to introduce modern agricultural technology. All these agriculture promotion schemes are gaining popularity among the Didsyi.

Under horticulture sector, fruit bearing plants like mango, coconut, pinapple, banana and vegetable crops such as bhindi, beans, tamato, onion, brinjal, cucumber, pumpkin, radish, chillies are being grown in their backyards. The Didayi have shown keen interest in planting fruit bearing trees. A horticulture nursery-*cum*-demonstration farm has been developed in a Didayi village, Purunaguma to produce seeds, seedlings, plants and conduct demonstration of vegetable crops for the Didayi farmers.

Water is the most essential input for agriculture. The project area lacks necessary irrigation facilities inspite of the fact that there are some perennial hill streams which can be harnessed to provide irrigation. As a result, the Didayi farmers get meagre output from their seasonal agricultural practices confined to the Kharif season which is solely dependent on the rainfall and agro-climatic conditions. Their lands remain uncultivated for two third of an year because there is no scope to raise a second crop after the rainy season. Moreover their farm lands which lie in the uneven hill terrain need to be reclaimed and developed for the purpose of introducing modern and intensive agriculture to boost the productivity. The Micro-Project within its limited manpower and limited resources is trying its best to develop the irrigation facilities and the agricultural lands in the project area. A new water harvesting structure on the perennial hillstream near the village Oringi has been constructed and an existing dilapidated checkdam at Muduliguda has been renovated out of the funds given by Malkangiri I. T. D. A.. Two new water harvesting structures, one at Oringi and the other at Purna guma has been constructed recently to facilitate cultivation of rabi crops during winter. Side by side land development and input assistance schemes have been launched in the Didayi villages viz. Purunaguma, Chilipadar, Oringi and Muduliguda. Didayi farmers have welcomed these schemes and are voluntarily coming forward to participate.

The Didayi living in hill settlements practise Podu cultivation for their subsistence as adequate plain lands are not available in those areas. This harmful practice causes destruction to the forest and environment. With a view to wean the tribals away from this harmful and uneconomic pursuit, conserve the precious soil, forest and environment and at the same time to provide them with an alternative means of livelihood in a phased manner, an extensive programme of economic plantation of the draught resistant plant-cashew have been taken up by the Micro Project since June, 1988 in the deforested Podu lands, hill slopes and wastelands lying under the possession of 60 Didayi families. 3,344 cashew plants have been planted in a area of 48 Acs. @ 70 plants per acre during 1988. The cost of plantation during the first year has been Rs. 462 per acre which is 35 per cent less than the cost estimate per acre (Rs. 700) made by the soil Conservation Department. This has been achieved by ensuring direct involvement and participation of the Didayi beneficiaries at every stage of operation such as raising seedlings in nursery, watch and ward, transportation of seedlings from the nursery to the plantation site, digging the pits, planting the seedlings, preparation of tree guards, manuring and plant protection activities. By this way they have learnt the techniques of raising plantations and at the same time they earned wage and employment.

In the beginning the Didayi were reluctant to participate in this scheme because some vested interests spread a rumor that Government would take way their podu lands by planting cashew. Only by the persistent efforts of the project staff the deadlock caused by misinformation and suspision was broken and a break through could be achieved as the Didayi beneficiaries came forward slowly one after another to take part in this scheme. This scheme has become popular and with each passing year, the number of beneficiaries and coverage of area under cashew plantation are increasing.

Adequate educational facilities are not available in the Project area. There are only 4 Primary Schools functioning in the plain Didayi villages near Kudumuluguma, covering only 30 per cent of the Didayi households. There are no schools in the remaining 34 Didayi villages situated in the remote hill area and resorvoir cut-off area which accounts for the appallingly low level of literacy of the tribesmen. Moreover, the existing four schools are in a bad shape. Now two educational schemes such as the National Adult Education Programme and Anganwadi Centres under Intigrated Child Development Scheme are under operation in the project area. For several reasons these two schemes have not made any impact. On the other hand the Micro-Project within it's limited manpower and resources have taken some steps for the spread of education, under the scheme called " Gyanmandir ". Some literate Didayi young men and young women have been picked up, trained and posted in Didayi villages work as leaders and volunteers. They are entrusted with the responsibilities of creating awareness and motivation among the natives about the Micro-Project and it's development programmes, keeping liasion between the project and the people, carrying out the programmes in their respective villages and also teaching the children and adult during morning and evening hours. Reading and writing materials have been supplied by the project for this non-formal education scheme. This scheme has made some impact within three years. Six children of the remote hill-top village Bayapada have been taught up to the 4th standard by a dadicated worker of the project.

A registered voluntary organisation composed of enterprising Didayi young men and women have been formed in the name of Didayi Swechhasebi Sangha during 1988-89 with a view to involve the Didayi youth in the development programmes and ensure close inter action between the project and the target people. It functions under active guidance of the project staff. The members of the Sangha have taken up some social services works like keeping the villages and it's sorroundings clean, making minor repairs to the village approach roads, motivating the people to cultivate hygienic habits, reporting any disease, epidemic or mishap occuring in the villages to the project authorities. They have collectively constructed a shed for Gyanmandir at Mudulipada.

For promotion of traditional crafts, a Vocational Training Programme in bamboo handicrafts for tribal women has been conducted during 1989. 15 Didayi women have participated in this programme which ran for a period of six months. Subsequently another training programme for weaving woolen carpets have been successfully conducted by the Micro-Project with overwhelming response from Didayi women. A training-*cum*-production centre has been established at Kudumuluguma to carry out such Vocational Training Programmes.

Minimum health care services are not available in the project area. Didayi people suffer from a host of chrnonic diseases such as malaria, T. B., skin infections, stomach ailments etc. for their unclean and unhygienic habits and for the unhealthy climate of their habitat. They resort to their age-old indigenous magico-religious curative practices as they are not aware of the modern system of health care and medicine. In an attempt to provide them minimum health services, the Micro-Project is organising regular health check-up and immunisation camps in the interior Didayi villages with the help of the medical staff of the local Primary Health Centre. Necessary medicines and diets are being supplied to the Didayi patients free of cost. By 1989, 121 Didayi beneficiaries were covered under health check-up camps, 54 children under immunisation camp and 210 patients were supplied with free medicines as per Doctors prescriptions. The project is maintaining health cards for each beneficiary family.

As stated earlier, lack of minimum road communication facilities have made most of the Didayi villages inaccessible and isolated. It is a herculean task to connect these interior villages by constructing roads in the mountainous tracts. However, a beginning has been made by building an allweather road linking Kudumuluguma and Purunaguma, the proposed project headquarters and then from Purunaguma to Oringi, at a cost of Rupees 22 lakhs. Later with availability of funds, this road can be extended from Oringi to Bayapada.

Like other Micro-Projects the Didayi Development Agency also suffers from some common handicaps and constraints. It does not have minimum technical and non-technical staff to plan and execute time-bound development programmes for promotion of agriculture, horticulture, soil conservation, irrigation, land development, vocational training etc. Government as a matter of principle have reduced the total staff strength to 7-8 employees including the Project Officer, Clerk-*cum*-Accountant, Jeep Driver and two class IV workers with a view to cut down establishment expenditure. As a result the Project has to seek technical assistance from concerned field agencies of other departments which is a major bottleneck against timely formulation and execution of the programmes. Professional rivalry and unhealthy competition among the field agencies often retards the progress of work. It becomes very different to enlist the co-operation of concerned field agencies for various programmes.

In addition to the shortage of staff, shortage of funds limits the scope of implementation of required schemes and coverage of villages and beneficiaries. The Micro-Project is funded by the State Government out of Special Central Assistance allotted to it from time to time in shape of grant-in-aid. The total annual allotment of grant-in-aid is very small to meet the cost of establishment and development programmes. With this amount it is not at all possible to take up certain minimum infrastructure development schemes like construction or repair of village approach roads, making cross-drainage works, sinking wells and tube-wells, constructing irrigation structures, building community centres and the like which are badly needed for the remote Didayi villages. Therefore only few family oriented income generating schemes are being implemented limiting the coverage to some of the villages in a phased manner depending upon the availability of funds. Besides the amount of allotment per year is not fixed but varies from time to time and given in instalments. It causes difficulty to make annual action-plan in advance and gives rise to adhocism.

There is no provision for expert advice, guidance and supervision in respect of selection, formulation and implementation of felt-need oriented action programmes. Also, there is no built-in-system of monitoring and evaluation of on-going schemes to detect and rectify the faults and fix responsibility.

Besides, the Micro-Project has no office building, godown, garage and staff quarters since five years of its inception. Arranging rented accommodation in an interior and under developed tribal area like Kudumuluguma has become a major problem which has indirectly affected smooth functioning of the Micro-Project. Now the buildings are under construction at Putunaguma and it will take atleast one year to be completed.

The Micro-Project staff work in this difficult and unhealthy area risking their life, health and sacrificing their personal comforts. Proper accommodation for their family, educational facilities for their children and medical facilities are not available in this area. No special incentives other than a small amount of project compensatory allowance is provided to them, for their service in the Micro-Project to compensate for their sufferings and ensure their motivation and dedication. These issues need due consideration in order to make the Micro-Projects a success/story.

Despite these constraints and problems, the Didayi Development Agency marches ahead with passage of time learning lessons from its failures and successes. It has made its presence felt among the Didayi by buildings a good rapport slowly and gradually. This has been achieved by involving the beneficiaries and their community leaders and ensuring their active participation as far as possible in the development programmes. The task has been easier because the Didayi may be timid and shy but they are simple, friendly and responsive. Gradually they are coming forward to participate in variouls welfare programmes. But certain major evils like illiteracy, ignorance, superstitions, alcoholism, indebtedness and exploitation by vested interests are still present in their area and social system. The planned changes introduced by the Micro-Project and other welfare agencies would come with the spread of education and communication. However for the present the process of change has just began and one should look forward in the sense that at least a beginning has been made.

PART II

SEMINAR PAPERS AND MINUTES OF DISCUSSION

Forestry and Tribal Development

N. Patnaik

PART I

Saora Methods of Agriculture

The Saoras of Ganjam district, Orissa practise three kinds of cultivation-in the little gardens or homestead lands near their houses; on their terraces; and in the swiddens on the hill-slopes and hill-tops.

The kitchen gardens raised near their houses are called Jonamlum and are carefully fenced and manured with cowdung and refuse from the house. Vegetables like pumpkin, cucumber and bean are grown. In some places tobacco, maize and ginger are also grown.

The terraced fields which go by the name Pady ar or Sarban ar are exclusively meant for paddy cultivation. The terraces are built right up to the beds of hill-streams and extend many hundred feet from the depths of the valleys to the hill-slopes and in some places rising up to the hill-tops.

The terraces are works of great engineering skill. The platform of each terrace is flat throughout and the fall of each terrace is stone packed. The construction of the terraces is so ingeniously and skilfully made that no soil is carried down by the water that flows from higher terraces to the lower ones.

The water management is equally skillful. The flow of water from one terrace to the other is controlled by channels and waterways which are provided in the ridges of the terraces. The water management is so skilful that it avoids flooding of the terraced fields. In many places water trickles from level to level through stone facings and ultimately flows down into the lands in the plains. But in no case either the soil is carried over by water from the terraced fields or any damage caused to the stone walls. The indigenous methods of irrigation which have been devised to control the flooding of the fields is quite remarkable.

Where water is always available paddy is grown twice a year in the terraced fields. Two varieties of paddy are transplanted in the terraced fields-an early variety called Amba Dhan and the late variety called Bada Dhan.

Some progressive farmers among the Saoras have taken to cultivation of high-yielding varieties of paddy such as Jaya and Ratna and also apply necessary fertilizers and pesticides which are supplied to them by the Blocks. As all people do not have terraced fields, large-scale adoption of improved agricultural practices is not possible at present. Apart from the shortage of terraced lands the limitations set by the terrain also hinder adoption of agricultural innovations on a wide scale. As in some cases water trickles through the stone facings of the terraces the fertilizer is drained off from the higher level to the lower level rendering the terraced fields at the higher level devoid of fertilizer and those in the lower level impregnated with an over dose of fertilizer.

The lands in the plains belong to the non-tribal communities and to these fields the water into which fertilizer has been dissolved ultimately flows. In this process the non-tribal communities derive all maximum benefit and the Saora are denied such benefits by the adverse conditions of the terrain. Knowing this fully well the terraced cultivators show little interest in adopting anything of the package of improved agricultural practices.

Terraced fields are privately owned and are handed down from father to son. They are mortgaged to local money and paddy lenders who belong mostly to the Pana community. The Panas possess much influence in the Saora country and are mainly brokers, pedlars and sycophants. In short, they live prosperously on the ignorance and superstition of the Saoras.

The terraced fields are confined to certain pockets in Saora country. Therefore, the Saora of nearby and far off villages are drawn together to such places where terrace fields have been laid out on the beds of the hill-streams. In the case of shifting cultivation the swiddens are present almost in all hills in the Saora country. One mountain is not sufficient for the people of an average sized Saora village for shifting cultivation. Moreover, due to the locational peculiarities not all hills are suited for the cultivation of different types of crops. Therefore, the people of a Saora village have their respective swiddens in nearby as well as far off hills. The Saora system of agriculture shows that the village is not central either to terraced cultivation or to shifting cultivation.

The Saoras observe certain rituals in connection with terraced cultivation. The principal one is connected with transplantation. Before the seedlings are pulled out for transplantation, ritual is performed in the seed-bed. On this occasion dried fish and fowl are offered to a deity called Jatra. The belief is that the deity will be pleased and protect the plants from the attack of insects and will reward the people with a bumper crop. About 10 kg. of seeds are required for an acre of terraced land which gives an yield of about 800 kg. of paddy from rabi crop and 500 kg. of paddy from kharif crop. At the rate of Rs. 3·00 per kg. a farmer gets nearly Rs. 2,400·00 worth of rabi paddy and Rs. 1,500·00 worth of kharif paddy from an acre of terraced land. The total expenses per acre of terraced land comes to Rs. 1,000·00. Thus a Saora gets a net profit of Rs. 1,400·00 from rabi crop ond Rs. 500·00 from kharif crop. As against this the net value of crops grown in an acre of swiddens comes to Rs. 1,000·00.

PART II

Slopping Agricultural Land Technology (SALT).

There are now various viable alternatives available which give better yield with some capital, simple tools and little learning in complicated technology and agricultural practices. Rather the traditional method of terraced cultivation will serve a stepping stone to the adoption of the most suitable alternative which is discussed below.

This is known as SALT or Slopping Agricultural Land Technology. It is an agroforestry technology with agriculture and forestry crops as percentange ratio of 75:25. The experience of the Mindanao Baptist Rural Life Centre in Bansalen Davao del Sur shows that this technology can held reduce soil erosion and increase crop yield many times. This is how to put SALT-1 in terraced fields of Saoras.

Step 1 : Located and Development Contour Lines.

After you have found and marked the contour lines, plow and harrow them ready for planting. The width of each contour line to be prepared should be one meter.

Step 2 : Plant Contour Lines with Leguminous Shrubs and Trees.

On each contour line, make two furrows one-half meter apart. Plant at least 2-3 seeds per hill at a distance of one-fourth inch between hills. Cover the seeds firmly with soil. Examples of NFTs are Flamengia congesta, Gliricidia sepium (madre de cacao or kakawate), Leucaena diversifolia (acid-tolerant ipil-ipil), and the Desmodium (rensonil).

Step 3 : Cultivate and Plant the Strips Alternately.

The space of land between the thick rows of NFTs where the crops are planted is called a strip. If you wish to prepare the soil for planting before the nitrogen-fixing trees are fully grown, do it alternately, on strips, 2,4,6,8 and so on. Alternate cultivation will prevent erosion because the unplowed strips will hold the soil in place.

Step 4 : Plant Long-term Crops on Every Third Strip and Land Borders.

Permanent crops may be planted at the same time the seeds of NFTs are sown. Only the spots for planting are cleared and dug; later, only ring weeding is employed until the NFTs are large enough to hold the soil se full cultivation can begin.

Step 5: Plant Short-term Crops on Every First and Second Strip.

You can plant short and medium-term crops between strips of permanent crops as a source of food and regular income while waiting for the permanent crops to bear fruits. Suggested short and medium-term crops are pineapple, ginger, gabi, castor, bean, camote, peanut, mung bean, melon, sorghum, corn, upland rice, etc. To avoid shading short plants are planted away from the tall ones.

Step 6: Trim and Contour Hedgerows Regularly

About once a month or when they beign to shade your crops, the continously growing NFTs are cut down to 1m. Cut leaves and twigs are always piled at the base of the crops. They serve as an excellent organic fertilizer. This way, only a minimal amount of commercial fertilizer (about 1/4 of the total fertilizer requirements) can be used if you so desire. Gradually decrease the use of commercial fertilizer if your crops already look healthy and productive.

Step 7 : Rotate your Food and Cash Crops

A good way of crop rotation is to plant grains (corn, upland rice, sorghum, etc.), tubers (camote, cassava, gabi, etc.) and other crops (pineapple, castor, bean, etc.) on strips where legumes (mung, bean, bush sitao, peanut etc.) were previously planted and *vice versa*. This practice will help maintain the fertility and good condition of your soil. Other management practices in crop growing like weeding and pest and insect control, should be done regularly.

Step 8 : Maintain your S.A.L.T-1 Farm

Apart from providing you with adequate food and sufficient income, an even more important benefit of using SALT is that control of soil erosion. This is done by the double thick rows of NFTs and the natural terraces being formed along the contour lines of the hill. As you go on farming the slopping land, keep gathering and piling up straw, stalks, twigs, branches, leaves, rocks and stones at the base of the rows of NFTs. By doing this regularly, you can build strong, permanent, naturally green and beautiful terraces which will reliably anchor your precious soil in its right place.

Sedimentation : An Environmental and Ecological Hazard

Dibakar Sahu

(1) Introduction

Balanced eco-system consisting of soil, water, plant, environment, man and animal population is essential for the welfare and survival of mankind. Soil erosion and land degradation is going on at an alarming rate due to mismanagement and over exploitation of basic resources. Annual loss of world agricultural land due to soil erosion is as high as 3 million hectares and global average of sediment discharge into the ocean has increased presumably from two billion tonnes to 26 billion tonnes now. Crop productivity on about 20 million hectares each year is reduced to zero. Problem of sedimentation of reservoirs and fertile valley lands has increased manifold. In India it is estimated that nearly 5·334 billion tonnes of soil is being lost every year. Out of 328 million hectares of land about 150 million hectares suffer from erosion.

(2) Sediments, sources and formation

Sediment is fragmented material that originates from physical disintegration and/or chemical decomposition of rocks. Sediments vary in size ranging from large boulders to colloidal particles. Sediments as well as sedimentary rocks are the products obtained by disintegration or decomposition or both of igneous and metamorphic rocks and which are detached and transported to a site of deposition by water, air, ice, etc., where it may be acted upon by solution carbonation, reduction, oxidation, cementation, consolidation and biological agents. Sedimentation is the process of sediment deposition. Sedimentation of any particular particle size takes place when the velocity of flow in transporting medium falls below its terminal and settling velocity. Considering our own position in India, the major source of sediments are the upper catchments of our river systems. The upper catchments are hilly and undulating were various tribal and economically backward people reside. Some of our tribes also practise shifting cultivation which is unscientific from sedimentation point of view. These sediments from the upper catchments are deposited in the valleys and deltas in the downstream ends. In the delta and valleys sediment production is nil or rather negative, i.e., sediments from upper catchments are deposited in valleys and delta areas.

(3) Rate of denudation

In countries of South Asia the present rate of denudation are far higher than those that could have prevailed during past ages. And this is what we should expect for a variety of reasons such as—

(*a*) The continents are now more elevated and of greater area, relief and climatic contrasts that are now existing than has been usual. The total energy of rivers available for erosion and transport is therefore abnormally high and conditions favour higher rate of denudation.

(*b*) Extensive regions are now coverd with glacial and glaciofluvial deposits, most of which offer little resistence to erosion.

(*c*) Human activities have greatly increased rates of denudation by large scale deforestation, and agricultural activities, by excavation and other engineering, mining, etc., projects and by addition to the atmosphere of the CO_2 from factories, fires, burning fusil fuels together with more corrosive gases.

(4) Sediment yield

It is the quantity of sediments which is obtained by deducting deposited sediments enroute from that of gross erosion. Estimates of sediment yield are required to assess damage to environment and life support systems and to assess conservation measures to be taken up in the catchments. It is also required to assess sediments design structures.

The sediment contents of water observed over a few years on different river sites in India is given below. (It is expressed as cubic metres per square kilometres of catchment per year). The ratio of dry weight of the sediment to the weight of water sediment mixture multiplied by 10^6 is the sediment concentration in parts per million or milligrams per litre.

TABLE

Sediment content of water observed over a few years on different river sites in India

Sl. No.	River Site		Metre Cubic/ Sq. Km./ Year
1	Sutlej at Bhakra	..	600
2	Chenab at Kantham	..	600
3	Chambal at Gandhinagar	..	365
4	Ganga at Farakka	..	560
5	Kosi at Barahakhshetra	..	2,000
6	Teesta at Anderson bridge	..	5,148
7	Brahmaputra at Pandev	..	508
8	Narmada at Garudeswar	..	502
9	Tapi at Ukai	..	1,094
10	Godavari at Polavaram	..	192
11	Manjire at Nizam Sagar	..	560
12	Damodar at Panchet	..	1,075

The sediment content of a river runoff varies from month to month. It is negligible in lean season flow and maximum in monsoon months. It also varies from river to river. Krishna and Godavari carry about 100 ppm, in Ganga it exceeds 2,000 ppm, in Kosi 3,310 ppm, in Mississippi it is 1,750 ppm, in Nile 1,500 ppm, and in Yellow river of China 24,000 ppm. The flashy streams of Siwalik hills of the Himalayas, known as choes, bring down large amount of loose sandy soils and deposits them on the fertile plains of Punjab and U. P.

(5) Factors influencing sediment yield

(*a*) *Climatic factors*—It includes precipitation, temperature and wind. Most important factor is precipitation. It not only detaches the sediments from the land surface but also acts as agent of transportation. Effect of precipitation is greatly modified by topography, soil characteristics, vegetative cover, land use, etc. The erosive power of rainfall depends on intensity of duration and frequency of rainfall. Temperature is not directly responsible for increase or decrease of sediment yield, but it modifies the effect of various other factors like precipitation, cover, water regime in sediment source areas. Often high temperature is associated with desert conditions. Wind erosion is more perceptible in arid and desert areas. Sand-dunes are seen in deserts as well as in sea shores.

(*b*) *Watershed factors*—Larger the area of watershed in particular physiographic location the larger is the sediment yield. However, the rate of sediment yield per unit area may decrease with increase in size of the draiage area in an uniform physiographic area. Topography or shape of the land surface decide the proportion of areas of valley land, medium land, upland, escarpments, canyons, etc., in any watershed. Slope is a major factor responsible for distribution of energy of active factors like precipitation. Drainage pattern refers to spatial arrangement of streams in a basin. It reflects the geologic structure and relative relief past and current climatic and tectonic and geomerphic history of the basin. When drainage channel passes through soft and least resistant rock strata, it erodes heavily and contributes maximum sediment. Further sediment production is also governed by land use and land cover conditions. Any land or soil subjected to various operations like cultivation, hoeing, ridging and furrowing yield more sediments. A land subjected to various unscientific landuse like shifting cultivation, burning, etc., yield more sediments. A land covered with permanent vegetation like forest and closely planted trees yield less sediments.

(6) Damage caused by deposition of sediments.

(*a*) Less fertile sediments may bury down more fertile and productive land below, e. g., sand casting of fertile cropland during flood.

(*b*) Damage to growing crop and burial of standing crops.

(*c*) Choking of drainage channels due to sediment deposits resulting in the rise of water table and creation of swampy areas.

(*d*) Channel courses may be filled up reducing discharge capacity and causing frequent floods as in case of river Mahanadi.

(*e*) Channels may change' their course due to deposition of sediments in the original channel as in Kosi river. This may damage adjacent crop area as well as built in areas.

(*f*) Costly reservoir are silted up reducing longivity and useful life. There will be reduced power generation, irrigation, navigation, drinking water-supply, etc.

(*g*) Sediment deposit may cause damage to communication lines like telephone and telegraph. Regirding and realignment of railway/road may be necessary. In July 1970, the upper Ganga Canal taking off at Haradwar got silted up completely for a length of 12 Kms. The silt was 1·7 million cubic metres in volume.

(*h*) Recreational facilities like tourist centres, waterbodies, historical monuments, etc., may be affected (famous Sun Temple of Konark has been partly buried under sand). Chilika lake which is a tourist centre in the East Coast of India has been progressively silted up.

(*i*) Rural and Urban settlements may be damaged due to sediments. Due to rise of bed of river Mahanadi and its branches which surround Cuttack City, the city itself is now at a lower level than the river bed. The city is being protected by giving protective ring bund all around.

(*j*) Sediments deposited in channels of harbours require continuous dredging to maintain ship channel and docking facilities. At times this has given rise to bilateral disputes between countries to share river flow.

(*k*) Sediments destroy spawning beds of fish, ruin their eggs and consequently reduce fish supply. Fish eat worms, insects, their larvae and other small aquatic animals that feed on microscopic plants, but muddy water shades out light interfering with the growth of microscopic plants. In many streams sediments fill the deep pools that provide a refuge or shelter during dry season. Sediment suspended water interfere in normal breathing of fish as efficiency of gills is reduced.

(*l*) Sediments directly affected public health in many areas. Supply of potable water is made more difficult and costly. Large amounts of money is spent in mosquito control.

This is apparent that sediment effects every citizen as it means higher taxes, railway fares, elecricity and water bill, higher food and clothing prices, costly health care and more frequent request for disaster grants.

(7) Sedimentation as environmental and ecological hazard

(*a*) The problems created by sedimentation has been briefly mentioned under paragraph 6 above. Sand casting of arable fertile land burying down of standing crop affects the human population due to loss of production and productive land. In the flood of 1980 in Gunupur Subdivision of Koraput district large track of land was sand cast. Cattle and other livestocks lost, habitations submerged and high level bridge over river Vansadhara was washed down. This forced Government to give grant over several crores of rupees for relief measures and restoration of sand cast land as well as communication lines. All the sediments came from hilly track of Koraput and Kalahandi districts dominanly populated by tribals.

(*b*) Water logging conditions created due to sedimentation becomes a breeding ground of mosquitoes. Due to water logging, oxygen is cut off from soil body killing many of the micro-organism responsible for breaking down of complex plant nutrient compounds to simple avaliable forms. Soil temperature also comes down reducing many activities of micro-organisms and chemical reactions. From water logged areas methane, nitrous oxide, ammonia and carbon dioxide gases are omitted.

(*c*) In tribal areas where shifting cultivation is practised large quantities of CO_2 are released to atmosphere due to burning of vegetation (trees, bushes, etc.). The energy released also goes waste to the atmosphere.

(*d*) Due to sedimentation in rivers surrounding the city of Cuttack, the plight of Cuttack City dwellers is known. The entire Cuttack City is polluted as the discharge of sewage wateris very slow, due to absence of grade in drainage channels. The entire surface water of shallow wells are polluted due to large number of soak pits constructed. There is no sewage disposal system worth the name. The raw sewerage water is discharged into the river Kathojori which pollutes the water and increased biological oxygen demand. The plight of citizens of Cuttack due to contamination of entire soil profile, surface wells, and even drinking water, mosquito menace etc. is well known.

(*e*) Embankment is no answer to sedimentation problems in rivers—To prevent flood water spilling over to toe protected area (flood hazard may be reduced) by embankments but drainage problems become more acute. During rains discharge from land to the river or stream is reduced or even prevented. Therefore if we consider the malady remedy budget for areas adjacent to rivers, raising of embankments is not a solution. It only agravates the problem in the long run. Therefore the remedy lies else-where i. e. in the areas which contribute sediments. These areas are upper catchements of our river systems (incidentally these are the areas inhabited - by tribal and other economically backward people). Therefore the prime action is to take up conservation measures in the upper catchments so that our fertile and densely populated areas are saved from pollution and other ecological hazards and a better and healthier environment is provided. Prevention is always better than cure.

Let us now discuss the environmental and ecological hazards in tribal areas and its effect on their health, economy and other socio-cultural ethoes. As known the upper catchments of our river systems are undulating. Topographical hostility prevents any meaningful development easy. Due to shifting cultivation in these areas, large scale denudation takes place. The narrow vallies present between hill ranges are silted up. The medium and upland lose the fertile clay and silt fractions, reducing normal yield of crops. It reduces water holding capacity of soil and the choice of crop to be grown becomes limited to coarse grains. Due to burning of the slash energy is lost to atmosphere, more CO is released to atmosphere, and microflora and fauna are destroyed. Soil structure is also damaged. The organic matter (manure) present in the soil are burnt. All these factors are constantly at work for year after year, make the tribal families poor day by day. Due to disappearance of vegetable cover, a large number of animals either migrate to other marginal areas or even are killed thus upsetting the balance existing between species of animals and plants which are shade loving disappear due to destruction of upper storey vegetative cover. The perennial streams dry up. Consequently there is alround detereoration. When the tribal population finds its marginal living difficult, he finds adjacent forests more lucrative to destroy and earn a marginal living. The tribal has to travel longer distances in hostile topography to continue to earn his living, thus more energy is lost in walking to and fro than actually working on land. All these have upset his annual routine rituals and gradually pushing him to the wall for survival.

Because of neglect of the tribal areas the people living in the valleys add plains also suffer as sediments from tribal areas are deposited on their land. Therefore the remedy lies taking up conservation measures in the upper catchments. This will provide employment to the tribals and wean them away from shifting cultivation. The enferiority complex of the tribals for practising shifting cultivation. Will also disappear and he will be at least proud that the stigma of misuse of land will not hang over him as a sword. He will, then be, an ideal citizen by joining the national mainstream. As regards the place of worship in the village it is eroded and it becomes difficult for the people to take community worship and festivals arround the place of worship. Soil is treated by tribals as origin of life and as such soil is worshipped, but due to erosion soil is lost and their sentiment is hurt.

REFERENCE

1. Sahu Dibakar .. (1971) Tribal rehabilitation through coffee cultivation. Indian coffee Vol XXXV, No. 3, dated March 1971.

2. Odum, Eugene P. .. (1975) Ecology. Oxford and I. B. H. Publishing Co. Private Limited, New Delhi.

3. Sahu Dibakar et. al ..	(1977)	Rainfall abnormalities in Orissa (Kalahandi district) 1958— 67. Jour. Soil and water Cons. in India Vol.- 27, 1 and 4 Jan-1977.
4. Darrow Ken and Saxenian Mike	(1986)	Appropriate Technology source Book. Volunteers in Asia Publication P. O. Box-4543, Stanford, California-94305 (U. S. A.).
5. Jacob, Linda —	(1986)	Environmentally sound small scale Livestock Projects—Guidelines for planning Tsaile, Arizona, Vita Publication Services 1815 North Lynn Street, Suite 200, Arlington Virginia-22209 (U. S. A.).
6. Singh, R. P. et. al. ..	(1987)	Alternate Land use systems for drylands of India. Central Research Institute for Dryland Agriculture, Hyderabad-500 659.
7. Sahu Dibakar ..	(1987)	Reference Book on Soil Conservation and Remote Sensing. Roopanand Publishers, Bhubaneswar.
8. Karwar G. R. et. al. ..	(1988)	Dry Land Horticulture, Central Researcn Institute for dryland Agriculture, Hyderabad-500 659.
9. Sahu Dibakar ..	(1988)	Problem and prospects of waste-land Development in Orissa. Directorate of Soil Conservation, Orissa.
10. Sahu Dibakar ..	(1990)	Land-Forms, Hydrology and Sedimentation Naya Prakash, 206 Bidhan Sarani, Calcutta.
11. Nayak Radhakant et. al. ..	(1990)	The Kondhos. A hand book for Development. India Social Institute, 10 Institutional area, Lodi Road, New Delhi-110003.
12. Anonymous ..	(1991)	Survey of environment 1991. Kasturi and Sons Ltd., Madras-600002.

SOCIAL FORESTRY PROJECT, ORISSA: A TORCH BEARER

C. R. Mohapatra

The initiation of a Social Forestry Project, with Swedish support at cost of Rs. 281·7 million over a period of five years in 9 districts of the State during 1983-84 is an important land mark in forestry development in Orissa.

The Project with its integrated and multi-component approach reflects the rural development nature of Social Forestry and therefore, to a large extent, deviates from other social forestry programmes and traditional forestry. The project is characterised by a number of innovations to make it a people oriented programme.

Characteristics:

Social forestry can take many shapes, but there are a number of characteristics which can be found in most social forestry activities. These are:

Social forestry is forestry for the people and by the people. In social forestry the people are the direct, and not the indirect beneficiaries, as in the case of traditional forestry. Social forestry cannot develop without full participation of the people.

It is forestry on a small scale. It is an undertaking by an individual, a household, a group of households or a community. It is therefore limited in scope and scale as Production inputs are limited in the hands of these enterpreneurs. If resources are made available, either through community or governmental action, the scale can be increased. Social forestry activities are often divided into two classes; Community Forestry and Farm Forestry depending on whether the benefits of the activity are directed towards the community/part of the community or an individual.

The poor, represented by individuals, households or rural communities, cannot wait for a long time period for reaping the benefits/harvests from social forestry undertakings. Therefore, the species have to be fast growing, early maturing and with multipurpose yields such as small dimension timber and poles, fencing fuelwood, leaves for fodder and organic fertilizer and flowers and fruit for food. The harvest should be extractible by in-house labour as a family enterprise.

Unlike traditional forestry practices, social forestry may range from monocropping with multiple use goals (fast growing tree species for fuelwood, poles & fodder) on one end to multiple or integrated cropping systems for a multiplicity of uses (trees integrated with food crops) for wood, food, fodder and green manure production on the other.

In traditional forestry local people only serve as hired workers of Government organisations or of corporate bodies which plan, implement and manage the forests. In social forestry, on the other hand, the villagers take all the risks, but also reap all the benefits for themselves.

In general, three major features characterise the Social Forestry under implementation:

Market orientation, reflecting the interest of the community as a whole or of the individuals for cash income from social forestry produce itself. This interest is clearly connected to Project aims, as independent management of the common property resource by the community entitles it to dispose and utilise its own resources.

Social orientation, reflecting the Project objective that resources created must serve the community as a whole and improve the living conditions of the weaker sections in particular. This objective can only be achieved if the local society confirms it and evolves strategies that facilitate production bias towards the poor.

Environmental orientaion, reflecting the long term interest of the society for rehabilitation of the potentiality productive resources, which have been neglected and/or have deteriorated over decades. The process requires long-term commitment by all the parties involved, i.e. individuals, communities and the Government. Substantial inputs have to be invested without the prospect of immediate returns.

To sum up, social forestry is a small scale land-use operation ranging from pure forestry to integrated agroforestry, planned and implemented by individual villagers or communities to yield products and services for their primary use and benefits. The land used for social forestry could be privately owned, community or clan owned, or Government controlled; in the last case, the land has to be accessible to farmers.

Activities .

A variety of tree planting and allied activities are included under Social Forestry. These can be classified as follows:

Nursery Production and Management;

Plantation Development.

The following kinds of plantations are undertaken in social forestry:

(a) Block plantation on Government land of various descriptions, such as degraded forests, tank foreshores, village commons and the like,

(b) Strip plantation on Government land like road sides, sides of railway lines, banks of canals and other water courses and shelter-belts along sea-shores and other wind affected areas,

(c) Plantation on private lands, i. e., farm forestry,

(d) Plantation for soil and water conservation including plantation on mine wastes,

(e) Plantation for recreation and bio-aesthetics like city and institutional plantation, plantation around factories for pollution control and environmental amelioration.

Supportive activities like Extension, Training, Research and Publicity.

Objectives and Strategies for Implementation:

The objectives of social forestry activities can be divided into three major classes summarised below:—

Production objectives:

Satisfy wholly or partly some of the basic needs of the rural population like small timber, fuelwood and fodder.

Produce raw material for village level cottage industries based on forest products.

Generate, marketable surplus of forest products to yield cash incomes and improve the consumption level of the village poor.

Increase crop yields through appropriate agroforestry models.

Increase yields of edible flowers, fruits, tubers and other minor forest products.

Rural Development Objectives:

Create additional gainful employment for the rural poor with an accent on women and develop self-employment activities related to forestry.

Increase income of the weaker sections of the village community.

Create new assets which can form part of a village-based cottage industry or which can be incorporated in the existing forest based economic system.

Introduce sustained-basis systems for common property resources managed by the village community which strengthens the benefit sharing mechanism and local decision making process.

Increase the participation of landless, small and marginal farmers in the management of common property resources.

Help develop tribal intensive areas.

cological Objectives :

Protection and improvement of the soil,

Reclamation of degraded lands,

Decreasing pressure on natural forests,

Providing environmental stability,

Strategies :

The Project can be described as a system where the fulfilment of its aims depend on an intimate interaction between Project personnel and the inhabitants of the selected villages. The relations between participants, villagers and the Project are governed by the Joint Management Plans, the Village Forest Rules and other pertinent legal documents related to forest management and product utilisation.

The strategy also implies that the major emphasis of the Project is the village approach, i. e., villagers shall participate and that the resources created shall belong to the village and should be shared, regenerated and expanded by everybody on his own. The extension and training activities of the Village Forest Workers (V. F. W.) are therefore to be seen as more important than the actual achievement of a physical target, albeit there will be no interest if there is no functioning plantation activity.

Pre-requisites for Implementation

People's participation:

Community forestry is a viable long-term option only if true participation of all segments of the village communities is forthcoming. Participation is necessary because, in a longer-time perspective, necessary large scale afforestation must be undertaken by village communities or individual without the financial support of the Government. The Project must, therefore, be a vehicle for disseminating necessary knowledge and techniques to people so that they can undertake forestry operations by themselves in the future. In a shorter time perspective, the participation of people is necessary because it is the only viable option for ensuring plantation protection for introducing a system of sharing produce among villagers in an equitable fashion, for deciding what should be planted and how the trees should be used and enabling them to undertake self-generating tree production schemes.

To ensure this participation, the Project personnel must spend most of their time on the training, motivation and extention parts of the social forestry activities. All Project personnel from the Director to the Village Forest Workers should thus work as motivators and all activities undertaken must be viewed in the light of the participatory aspect.

Planning, training and extension activities must follow a fact-finding and bottom-up process. It means that the Project personnel, during field visits, must identify the forestry problems as envisaged from the village point of view through dialogues with the villagers. They must identify demands, perceived use of the trees, the existing pattern of forest use, the preferred trees for planting, etc. . In this process, it is important that special emphasis is given to collect information, discuss and plan with all section of the village society including the poor and women, who seldom are heard in an actual planning and implementing process. The facts that the activities undertaken are for the people and not forest department operations, that the produce is a community resource, that the harvesting, management and end use is for the village to decide and that the Project is a supporting and complementary unit and not a supervisory or "give away" organisation, must be widely disseminated.

Participation must also be secured by ensuring that decisions are made by the villagers themselves. It must be emphasised that there is a contract between the Project and the village, that obligations and rights are mutual and that the relationship between all parties should be one of reciprocity and partnership.

Physical and Legal Provisions:

The Project activities cannot be undertaken, participation cannot be ensured and it will not have an impact if land cannot be made available and legal questions related to production, management, harvesting and end use of the trees are not resolved. There are today some procedural constraints to undertake community forestry on demarcated, protected and B Class reserved forests, plain reserves and Praja Coupes (Parts of A Class reserved forests set aside for use of products by local villagers). Unless a change takes place, none, or very little active participation from people, will be forthcoming. There are also a number of legal problems associated with a people oriented forestry movement. These problems are related to several aspects ranging from permits to cut trees, transport and sale of produce, to the overall aspect of ownership, management, continuance and enhancement of plantations.

Decentralisation:

A village based tree production system must be based on decentralised actvities. This means that the Social Forestry Supervisor (SFS) and VFW must undertake their work at the village level. Planning, training and motivation must be a village activity. Nurseries have to be decentralised. Active Co-operation with Non-Governmental Organisations present at the range or village level should be, sought and they ought to be seen as important vehicles for implementing the aims of the Project. The concept of decentralisation also implies that employment and support for activities related to the development and use of forest produce would take place at the village level.

Co-operations:

The Project will have to establish close Co-operation with other concerned departments like Revenue, Community Development, Tribal & Harijan Welfare, Environment and Agriculture. At the district level close Co-operation is necessary with the Block Development Officers, Tahasildars, Subdivisional Officers, the Collectors and territorial forest staff. It is only through Co-operation here that many of the problems associated with for example, procurement of land can be solved. Contact with other agencies implementing Rural Development Projects such as RLEGP, ERRP, NREP, etc., is necessary both from co-ordinatory point and for dissemination of information and possible support. Contact must also be established with different corporations, Co-operatives, banks and credit institutions working in areas related to forest activities.

Social Forestry in the Orissa Context: Aims

The Orissa Social Forestry Project defines "Social Forestry" as follows : —

Social Forestry:

Is the creation of sustainable forest resources for the people, by the people, with Government support;

Its implementation implies full involvement of the people as individuals and as members of local communities, Creates resources primarily to meet the needs of the people for products of importance in the local economy such as sustained supply of fuelwood and fodder, wood for rural requirements, small scale industries and handicrafts and minor forest produce.

Aims at the establishment and/or reintroduction of tree cover over areas of land which have become degraded. This will help to restore the environment close to the villagers and farmland and contribute to soil protection and soil improvement.

Social forestry is essentially a strategy encompassing rural development, proverty alleviation and forestry activities addressed principally through the participating villages. When formulating objectives and strategies for achieving the overall aims, the following need especially to be considered:—

(*a*) Forestry is an activity which, in order to fulfil the needs of people and society, must have access to required land area.

(*b*) Operation take place over a long time period and the gestation period is long, generally longer than 5 years.

(*c*) Social forestry, aiming at people's participation, is a small scale decentralised activity with special problems related to silviculture, extension, training and social areas.

(*d*) Socio-economic diversity and ecological relationships in different parts of the State.

(*e*) Predominance of large tribal population in many districts.

(*f*) Excessive live-stock population found in most of the districts.

(*g*) Existing level of degradation of forest, revenue and village common lands.

(*h*) Existing organisation for social forestry and forestry operations.

(*i*) Social forestry, to a large extent, is a question of managing a common property resource with attached problems such as sharing of produce, decision making and participation by the whole community, etc.

(*j*) Qualitative long-term objective (developmental) must be related to the short-term quantitative (Physical) objectives.

k) Complex relationship between the rural development strategies and the qualitative and quantitative aims of the Project, especially when seen in a longer time perspective.

The Project aims to fulfil the basic needs of the people in respect of fuelwood, small timber, fodder, MFP fruits, etc. and at engaging around 5,000 villages for forestry production. The main components in the Project are :—

Establishment of village forests on 21,700 ha.

Rehabilitation and reforestation of forest areas on 35,300 ha.

Establishment of forest for landless people, 3,000 families, over 1,000 ha.

Stimulation in several forms for private forest plantations, 51 million trees.

Among the principles for implementation of the Project, the following are of major importance :—

Benefits from the plantation will be distributed equitable with bias towards the poorest sections of the society;

The Project will compensate (by creation of work opportunities and by design of the silvicultural methods) groups which are dependent on existing degraded forest resources;

At least 50 per cent of work opportunities generated by the Project will be given to women. The Project will also create recruitment and training facilities to enable women to hold staff positions on different levels of the project organisations.

The following steps were taken to ensure people's participation:

Constitution of Village Forest Committees in villages ensuring representation of the weakest section of the rural society. The Committee acts as a link between the villagers and the Project in order to ensure participation by the villagers in allocation/selection of land, selection of species, design of silvicultural methods and distributing of responsibilities for the development of the new resource.

Preparation of Joint Management Plan for each community plantation which is developed agreed upon by the Village Forest Committee and the Project in order to formalise means of co-operations, principles of distribution of products/benefits and expected contributions by the parties in the development of the forest resources.

The Orissa Forest Rules, 1985 provides the base for a legal framework for village forests.

The project lays stress on protection of the plantations by active involvement of the local people and ensure villages to take responsibility for protection replacing the traditional system for protection by forest staff.

The different plantation components implemented through Orissa Social Forest Project and the progress of achievement of the 1st phase are as follows:

Name of the component	Target	Achievement
Village woodlot	21,700 Ha.	84·54 %
Reforestation	28·300 Ha.	67·67 %
F. F. R. P.	1,000 Ha.	150·90 %
Rehabilitation	15,000 Ha.	94·60 %
Farm Forestry seedling distribution (in lakhs).	510 Ha.	68·48 %

The percentage of achievement under different components for the year 1987-88 varies from 67·67% to 150·90%.

Social achievement :

The Project's contribution to employment and income generation for the local people is one of the social benefits. Special attention is given to the distribution of income opportunities to certain categories such as weaker section of the society, women and head-loaders. The pattern of employment generated by the Project upto 1987-88 is as follows :

Employment Generation in the project, mill, person, days :

Year	Male			Female			Total
	S. C.	S. T.	Others	S. C.	S. T.	Others	
1984-85 to 1987-88	2·41 (16·9%)	4·11 (28·7%)	4·04 (28·3%)	1·15 (8·1%)	1·47 (10·3%)	1·12 (7·8%)	14·32 (100%)

Out of 35,000 villages in the 9 project districts, the Project aimed at covering 5,000 villages during the 1st phase. By the end of the year 1987-88, 3,623 villages have already been covered under various plantation components and another 9,873 villages have been covered under Farm Forestry component alone. The two most important items for ensuring or enhancing a village participation has been the constitution of Village Forest Committees in villages where community plantation components of the project has been undertaken and the introduction of a Joint Management Plan as a document describing the relations and obligations between the village and the project.

According to the Directorate of Social Forestry, Government of Orissa, the main problems met during the 1st phase can be summarised as follows :

The legal aspects of the ownership of the plantations and the sharing of produce has not been clear to the villagers in the initial stages. Until the question of ownership and contol of the created resources are solved, true participation will not be forthcoming. The villagers perceive that some of the provisions in the village Forest Rules clearly do not put the real power in their hands but still keep many of the important decisions in the hands of the officials from the Forest Department. Examples of such issues which are given are special orders such as transport and felling permits which can only be obtained and issued by the Forest Department.

In certain areas there are problems in obtaining land for the village woodlots and the FFRP component. The presence of the Project has in some cases been seen as an interference in the existing land use pattern and as the rationable behind the Project has not been properly disseminated to all villagers, conflicts and scepticism have developed. The initial bias in selecting project villages based on the availability of land has in some cases had negative effects as this has not been voluntary but partly forced participation. The creation of a village woodlot on grazing land has also in cases been seen as an interference in the village rights and that grazing can take place after about two years has not been made clear to villagers.

The management of the plantations has not been taken over by the villagers to the expected extent. This is mostly due to the fact that villagers are sceptical about the ownership question and that all Villagers have not been made aware of that it is the village resource which has been created and they have not been convinced that the actual benefits will flow to them at the end of the project.

Forest Department personnel, has been put in a new work situation where they have to work with questions related to the social aspects of forest development and not only forestry operations. This in combination with constraints in the training system of the project has made the work pertaining to extension in villages difficult.

The Village Forest Workers in many cases are still in the process of learning aptitude for the rask of social work with forestry as an entry point. They are also geared to achieve high physical targets every year and can thus only spend a short time in motivating villagers about the concept of Social Forestry, training the members of the Village Forest Committees and making the Joint Management Plan a working documents. They have very little time for keeping up a regular visiting schedule to the target villages which is necessary for the motivation of all villagers.

Conflicts between political or caste fractions and social groupings based on wealth, occupation, education and organisational positions, are not uncommon in villages. Where such a situation exists, participation is difficult to attain. In politically or socially homogenous villages, a very uncommon situation, the participation and interest is much higher than in heterogenous villages.

There is no tradition of production and management of forestry through group efforts in the State. Sometimes, caste and other social restrictions prevail for undertaking forestry work on the village level thus, e.g., women belonging to the general castes are now allowed to work in the fields. The knowledge about the benefits villagers can receive from an organised forestry operation through co-operatives and other organisations are also not known.

The presence of existing forests in the neighbourhood of some villages has made the motivatory work difficult as it has been difficult to argue for a need oriented Social Forestry activity and the villagers in the absence of awarness think that it is the duty of the Forest Department to create and maintain forests.

The Project is in most cases perceived as another Rural Development Project where it is expected that the benefits are going to be given to the villagers with only minor co-operation and part-time involvement. Thus active participation is not taking place.

The object poverty in many villages where the short-time perspective has to take precedence over the long-time perspective needed in a forestry operation is a serious constraint.

These views coincide well with the major conclusions of the S I D A. Appraisal Team as well as with the findings and comments of the indepenednt evaluation team fielded by S I D A.

Although the Social Forestry Project in Orissa is yet no more than eight years old, it can be seen that the project has generally met its targets and up-to-date achievements have been quite impressive. The social objectives of the Project involves issues like change of attitudes, traditions and relations, etc. at the village level with its bewildering mixture of different types of villages, ethnic complexity and complicated relationship. No substantial achievements in these directions could be expected in a couple of years since the commencement of the project. However, through the project an increased knowledge and awareness is building up on these issues leading to a quit transformation of the country side. Thus, a gradual process of change is being pursued. It will be the endeavour of the Government of Orissa to make a dent on these unresolved issues during the second phase of the project.

Ecological benefits of Five years old Social Forestry .... :

Plantation Growth : By and large Eucalyptus and Acacia dominate the species planted though they have often been interspersed with a number of species like Cassia siamea, Dolbergia sisoo, Ilantus etc. the overall annual growth rate in terms of the height of the 1984-85 batches of plants per year works out to be 1·44, 1·41, 1·34 and 1·43 meters for east, west, north and south zones respectively, which are fairly good.

Impact on Atmosphere : The impact on the atmosphere is seen basically in terms of the plantations effect in the surrounding atmospheric temperature. It was found on an average that the Project areas had a cooler atmosphere as compared to the control areas. The differences in the temperature are most marked in the noon temperature as against temperatures in other times of the day. Again the differences were found to be highest in the winter followed by the summer and least significant in the rainy season.

Effect on the Sub-soil Regime : Impact on the sub-soil regime was studied in terms of the plantations possible impact on soil chemical composition permeability, moisture retention and run-off water flow pattern.

Analysis of sub-soil perfeability level and moisture retention level showed that the plantations have contributed by and large towards increasing the permeability level and moisture retention level of the soil which is a very positive indication.

Analysis of the soil morphology and chemical composition showed that the Project area soil showed marginally more nutrients and plant minerals. This together with the fact that a substantial amount of the leaves are collected away by the people, would mean that the actual contribution of the plantation towards soil enrichment would be much higher.

As far as run-off water flow is concerned, it was found that due to lack of adequate bushy cover in between trees, there were small gullies even in the plantation lands. However, the run-off was much less in the plantation made substantial contributions towards soil.

Baghasala is one of the obscure tribal villages of Gunupur Sub-division in the district of Koraput. It is about 15 Kms. from Gunupur town and connected by a 3 Km. long fair-weather road with the Padmapur-Gunupur road. The total population of the village will be about 470. consisting of 120 families. The ratio of male and female population is about 50·50. The adivasis predominate numbering about 280. About 50 people belongs to Schedule Caste and the rest are of general category. Most of them depend upon cultivation. The literacy percentage of this village is about 30 per cent and the Ward Member of the village informed that there are 20 Government servants amongst the villagers. The cattle population is about 1,000. The only forest i. e., a patra jungle extends over an area of 3 Ha. and the village waste-land, including gochar will be about 10 Ha. The village encounters the fury of the river Bansadhara ever year.

The village has been provided with two tubewells for drinking water facilities. There is one Upper Primary School in this village. The nearest medical aid available is at Gunupur. The village has one Post Office which acts as a public call office also. About 12 household has been connected with electricity. Lift irrigation facilitate about 25 acres of cultivable land.

It was on the 19th January 1991 while inspecting newly created Dombasora "village wood lot", raised through the Social Forestry Project. I met a few school children about 10 in numbers on their way back home from their school. As a child I used to run to see a motor vehicle whenever a stranger intrudes into our village. Perhaps the same feeling still persists. Because the tired children came around with great enthusiasm to see the car parked on the roadside. Although they were tired and hungry, the smile on their lips was enchanting. It was a great fun to chat with them. They readily responded to my invitation to make a visit to the plantation adjacent to the road. I was rather surprised to find the children intro-ducing me the plants which were planted by Social Forestry organisation. They also informed me that at times they scare away the cattle intruding into the newly raised wood lot. Both the boys and girls readily agreed to adopt some of the plants and take care. Within 15 minutes of our friendship, an intimacy grew spontaneously. I enquired whether they can raise seedlings in their own house. Both the boys and girls assured me that they will try. In order to create a competition they were asked to form two groups one for the boys and the other for the girls. They were assured that they will be given polythene bags, fertiliser and seed and some financial advance for incidental expenses. I had my grave doubt on the assurances given by a group teenagers. Because I have encountered a number of grown up persons in a number of villages who nod their heads positively, but hardly comply.

On 19th March 1991, I was surprised to find out that in the meanwhile the girls have filled 5,000 polythene bags and the boys 3,000 polythene bags. They were encouraged to go ahead. 27th April 1991 was a day of rejoice for all of us. There were 10,000 seedlings awaiting to give a rousing welcome to me which were raised by the youngsters of village Baghasala. The group members were very much excited to show me the seedlings raised by them. The group consist of Jayanti Sabar, Lalita Sabar, Puspalata Sunamudi, Mamata Mohapatra, Subhas Sabar, Krishna Sabar, Subas Sunamudi, Harish Mohapatra. The elder villagers being deeply motivated by their children, gathered round me and requested to provide more number of seedlings for planting in their private land. The children's nursery was only a starting point for inspiring their parents to make their village green.

On 10th July 1991 when we reached Baghasala, a warm welcome was awaiting us to plant a few seedlings on their village roadside. The villagers being inspired by the children have already celebrated Vanamahotsava by distributing the seedlings amongst themselves raised under Farm Forestry.

I had attended many a seminars, workshops, plantation ceremonies, but I have never seen such a spontaneous response from the children of a tribal village who are deprived of the glamourous life enjoyed by their city dwelling brothers and sisters. The endeavour of the children has spread like a wild fire to the nearby villages of Gunupur Subdivision. Hopefully with a little more encouragement and incentive the children of Baghasala may make the environment of their village green and beautiful. The story of Baghasala is the story of the unsung heroes who have taught their elders and teachers to create an environment desirable for the mankind. It is hoped the "Green brigade" which has germinated in this unknown village "Baghasala" will one day roar as a real tiger (Bagh) not to frighten but to save the environ for the posterity. Presumably a word of blessing to these children may be a precious treasure for them to retain and react.

Micro : Perspective of the Changing Frontiers of Forest-Dependent Economy : The Saora experince

P. K. Nayak

1. What is forest to the 'Philosopher' is what is city to the 'savage'. The Philosopher and the savage think alike. The Philosopher rambles in the forest while the savage fumbles in the city. The difference between the 'philosopher' and the 'savage', between "we" and "they", the "development thinker" and the "target population" (tribals for our purpose) is varily not one of contexts but of levels. The spatial-contextual attributes of living while exaggerate the differences, the real manifestations can be attributed to the levels at which we and they operate. Relatively speaking, "we" are not on our own; "they" are on their own. That makes the difference. Policy implications need to be linked with this shift in thinking at a paradigmatic level especially when as an alternative, we place more emphases on enabling the poor tribalsto reinforce their existing strategies and develop.

2. The foresters' forest is the tribals' farm house. Forest is their homeland; they live and die in forest. Forest nourishes their life and living. Forest is their mother; forest is their father. They identify themselves as sons of forest. They are MEN and sophisticated MEN of the forest. They love living very close to forest, not necessarily out of techno-economic compulsions but out of sheer volitions. They entertain the ideology of ascending the hills and exploring into the forest. Good life and happy life to them lies in performing regular journey to the forest. People's natural space and social space are relatively coterminious. Natural time and social time move hand in hand in their case. Day time is work time and night time is bed time. The day breaks, they are in the woods; the night falls, they are in the dormitory. The harmony of nature and culture is best exemplified in the forest based tribal communities. The problematic of modern man is his act of fully against the warranted harmony of nature and culture.

3. We as outsiders classify forest on the basis of the nature and quantum of forest growth, distribution of dominant plant species, utility of each such species, etc. But the tribals as insiders classify the physical and biotic nature of the forest in social terminology. The social basis gives hierarchical meaning to the forest. The individual at an early age gets acquainted with its natural-physical make-up by a process of cultural labelling. They classify forest into resource-rich and resource-poor forest, healthfull and health-loss forest, mother's brother and sister's son's forest, grand mother and grand daughter's forest, forests of the god-kings, etc. Each forest has a nomenclature of its own and is presided over by a spirit. The physical map of the forest within the limits of the village-settlement and the wider territorial units remains in the minds of the people. They know their enseathed forest world intimately well. And about the characteristic contents of each forest they have in their own way researched relatively more emperically than the empiricist scientist. How best we tap people's own knowledge and ingrain and infuse them in an integrated way into our development efforts is the development rhetoric of the day.

4. Trees and their products have become more valuable for the tribals. Trees have increasing importance and potential as savings and security for the poor tribals and, therefore they

retain the trees as part of their livelihood strategies, and use them to meet contingencies. Trees can be compared with bank deposits. Trees are the poor people's savings banks. Trees provide the resources to deal with seasonal shortages. Trees are also the sources of recurrent flows of food, fodder and other useful material. When these flows are counterseasonal they help households get through the slack and lean months. When large sum is required, often suddenly, say for medical treatment, and where only a small sum is needed and people are poor or desperate, trees play a part in which cases they are either sold or mortgaged.

5. An empirical enquiry was undertaken in December 1991 under the auspices of the M. A / M. Sc. Field Training Programmes of the Department of Special Assistance in Anthropology, Utkal University, among the Saora villagers of Chandragiri area, Ganjam district, Orissa. I accompanied the students of the special group, 'Development Anthropology' to the field and supervised their work. The present paper is an outcome of my personal observations into the Saora society durfng the field trip and guidance of the student's data collection in three Saora villages (they were Lanjia Saora villages, but they have dropped the prefix Lanjia since 1981 under the aegis of the All Orissa Sabara Samaja) within a distance of 3 to 5 Kms. from the field-camp at Chandragiri.

The Saora, since generations living in hill slopes and mountain terrains have been deriving nourishment from the resource bases of the hills and forests in multiple of such ways satiating small needs and making a bare minimum living. One of the main mode of living devised and adopted by them is swidden cultivation, a primitive mode of agriculture. A number of variety of crops, cereals pulses, tubers and trees are grown in the swidden fields with the help of a small number of implements, the methods employed being crude, the process being labour intensive and the productivity being low. Subsistence living regularly gets supplemented by forest collections and in some cases by wage-earning outside the community. With the depletion of forest growth and the underwoods, swidden cultivation did not pay dividends and the Saora started preparing terrace fields in the foot hills and gradually ascended the hill slopes, step wise, converting them into rice fields by stone bunding method in an ingenious way. Thus the hill terraces served the purpose of growing crops, cereals and pulses, in kharif season, and some of the plots also once again in Rabi season. Use of plough and draught animals like buffaloes, cows and bullocks in the process of cultivation along with adoption of transplantation technique made the entire system of cultivation complex. When one takes stock of the year round activities of the Saora, it becomes evident that the agricultural outfit of the people is par excellent, unique among the cultivating tribal communities of Orissa.

Up until the time the hill tops and hill slopes were having verdant forest growth, the Saora were exploiting the hills and Swiddens with mirth and fury. Swidden cultivation was their way of life. Establlishing small settlements nearer to the Swidden fields was the practice; and moving the settlement ite alongside moving into virgin swidden plots was the norm.

Kins and affines in small group of families were living together forming a solidary group and the Saora world was defined in terms of the limits of their kinship boundary. The social basis of their solidary principle used to be animated by regular ritual practices and ceremonial observances and individual basis of any sort of socio-economic and religious consideration was being sacrificed at the altar of the community. Even, Gamango, the headman, did not have the chance of outdoing anything at the cost of tha community living. Men and women, both were partners in the process of raising crops in the swiddens. Sexual dimorphism in the pursuit of the swidden economy was almost blurred and the Saora women did form the central pillar of the re-production-production-continum. Song and dance, riddles and myths, feasts and festivities revolved round the cycle of swiddens. Youths enjoyed youthful exuberance and the elderly sang the glory of the dead. Self-respect and self-esteem during life time were as much valued as commemorating the deeds of the deceased in a large gathering of kinsmen. They were proud of their king and in principle, believed in social status hierarchy for the sake of social order and reinforcement of the mechanisms of social control. Might be people had wants but not miseries. They were working while dying. They did never display sign of disgust in their work however arduous it was, did not felter even when there was crop failure and did not have the disappointment even when there were calamities, vermins and pests. They were embodiment of high morality, dignity, valour, truthfulness and astuteness. They loved freedom and independence as much as they loved their own lives.

Cultivation of strembed land became the craze of the Saora. Whosoever acquired this type of land prepared himself to settle there permanently without making further drifts to any other place and the offsprings were encouraged to acquire such type of land during their life time. Thus, more or less, the settled agricultural way of life of the Saora did mark the beginning of a new chapter in the socio-economic and culture history of the people. Change in the technological sphere of agricultural activities and the labour co-operative system in the continuum scale had its socio-economic fall outs. It initiated a process of low level of stratification in the socio-economic sphere. The Saora households who did own such settled agricultural land wielded more socio-economic powers and were considered privileged than others, especially those who were rendered landless. This stratification got further fillip from above and outside by gaining royal patronage. Eventually, the new mode of agriculture bifurcated further the male labour and female labour. Women could be employed only at the transplantation and harvesting phases. Tilling the land, levelling the land and a host of other main activities like stone walling etc, were the men's job, which were considered primary and paramount. Male dominance surfaced as an epiphenomenon and it gave rise to other social formations like the tendency for forsaking the preferential marriage relationship (frequency of marriage in two lines being more) and evolving a prescriptive system of marriage, where the marriage partners, were not necessarily the sister's son and mother's brother's daughter. Thus economic grades and social strata got manifested,

In the recent years, beginning with 1980, the Saora have got the impetus of improving their agricultural practice coming in contact with the non-tribal caste neighbours and the Trbetan resettlers. The alien but innovative traits, particularly the skill and technique of agriculture have diffused into the Saora community, and there is greater acceptance of these even at the level of individual cultivators. The Saora have by now realized the benefit of having dug-wells in their respective crop fields. Some of them having been sceptical of the Government machinery's sincerity in delivering them the goods have taken personal initiative in digging out wells for irrigation purposes at their own cost. Relatively, the leading cultivators have adopted the new techniques and others are usefully imitating them. The spread of innovative ideas in the interior Saora villages has been effectuated on their own initiative, under the economic development programme of the Sabara Samaja, so to speak an indigenous form or regional development organization, where agriculture has been given top priority and in the zonal annual and monthly meetings of the Samaja, they are reviewing the agricultural situation and taking account of the new agricultural activities pursued from time to time by the Saora villagers. The leaders discuss in the meetings how to develop abandoned waste land and how to utilize land for multiple cropping for alleviating poverty and hunger. Vegetable crops like potato, tomato, cabbages, cauliflower, carrots, brinjals, pepper, sweet potato etc. are being raised by them along with maize and mustard seeds. Thus additional income from agriculture by raising vegetable crops and other cereals and pulses has in a big way weaned the Saora villagers away from the strong-hold of swidden cultivation. At the same time, of course, the depletion of natural resources in general and forest growth in particular surely have been the limiting factors to their propensity for all those exercises in the swiddens.

6. However, the Saora hills and forests have been over exploited in the process of pursuting generations of swiden cultivation and have been converted into bald, naked hillocks devoid of tree vegetation. Increasing demand of wood for fuel and timber in the growing towns-areas has further added to the systematic denundation of forests. For the loss of forest coverage, Saoras are not to be blamed alone, the non-tribal neighbours of the Saora also have rapacious roles. External factors and forces have chaged the traditional ecological set-up. External causation of destruction of forest is in fact more alarming than internal tribal. Stocked forests are restricted to few areas and vast stretches of hill slopes either have been converted into barren land or weeds and underwoods have taken over the thick woods. The remnants of old forests are also under constant pressure due to illegal felling of trees and cutting of wood. The one time close association of forest and the Saora is

showing a declining trend. Yet the share of forests in the economy of the Saora villagers is decisively of very high proportions. The data in the appended table overleaf reveal this, and seen from the point of view of the Saora themselves, the evidence suggests the degree of their dependence on forest and hence draws our attention to promoting alternative development measures keeping the forest and the people at the centre.

TABLE

Flow of per Household Average Annual Income in rupees from swidden+Dry Upland +wet Rice land+Trees Owned+Forest Collections of Three saore Villages of Chandragiri Area

Name of village	Income from Swidden	Income of from Upland	Income from wet Land	Total (*a*) Agriculrural Rice income
(1)	(2)	(3)	(4)	(5)
Padhigam (21)	1832·11 (0·86)	..	..	1832·11 (42·83%)
Konkarda (10)	1915·17 (0·45)	263·52 (1·15)	506·25 (0·70)	4684·94 (64·18%)
Jagarnathpur (14)	755·32 (0·46)	1478·93 (0·40)	549·15 (0·39)	2783·40 (51·57%)

Income from trees Owned		Total	Income from forest collections			Total	Total Income from land & Forest
Consumed	Sold	(*b*)	Consumed (other than firewood)	Sold fire	(Sale of fire wood only)	(*c*)	(*a*)+(*b*)+(*c*)
(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
34·05	571·42	605·47 (14·15%)	337·23	437·69	1065·00 (57·88%)	1839·92 (43·01%)	4277·50
88·00	905·00	993·00 (13·60%)	608·50	82·50	930·00 (57·37%)	1621·00 (22·20%)	7298·94
199·98	947·30	1147·23 (21·25%)	283·24	362·61	820·00 (55·94%)	1463·65 (27·16%)	5396·48

Analysis :

1. Padhigaon is a landless village. Neither do they have dry upland nor wet rice-land. Their main mode of subsistence is Swidden supplemented by forest collections. However, the annual income per household from Swidden in their case is more or less than with that of Konkarda although the Swidden land holding status of Padhigaon is almost twice that of Konkarda, whereas although the Swidden land holding status of Jagarnathpur is same that of Konkarda, income is less than half Konkarda. Jagranathpur is relatively an exposed village and Swiddens have been over exploited and that is why the yield is abysmally very low.

2. Income from dry upland is also more in Konkorda, more than that of Jagarnathpur. The yield from dry upland is more or less same in both the villages, but the difference in income is due to the higher landholding status of Konkarda, almost three times more than that of Jagarnathpur.

3. Income from wet riceland in Konkarda and Jagarnathpur is same but the landholding status of Konkarda is two times more than that of Jagarnathpur. This suggests that the yield from wet rice land is more in Jagarnathpur than that of Konkarda and infact the wet rice land of Jagarnathpur are relatively older than that of Konkarda and therefore have been better processed for more yield.

4. The total agricultural income of Konkarda is more than that of Jagarnathpur and obviously that of Padhigaon. It constitutes 64·184% in Konkarda, 51·57% in Jagarnathpur and 42·836% in Padhigaon.

5. Income from trees is more in cases of Jagarnathpur (21.26), but in Padhigaon and Konkarda, it is almost same constituting respectively 14·15% and 13·60%. It may be mentioned here that in Jagarnathpur there are more number of trees and they are well retained and well maintained.

6. Income from forest collection is significantly more (43·01%) than those of Konkarda (22·20%) and Jagarnathpur (27·16)%. However, in all the three villages income by selling firewood only constitutes more than 60% of the total income from forest collection and on an average, each household gets, Rs. 1000 each year from the sale of firewood which supplements their income and meets their small sum contingencies to a great extent.

7. Total income of Konkarda from land and forest is Rs. 7298·94, the highest among the three villages and is relatively well-to-do for the people of Konkarda enjoy appreciable benefits both from the forest and the dry wet land strategically situated in the middle, at the interior and being Padhigaon and at the exposed end being Jagarnathpur. Moreover, the natural resource bases of Konkarda are qualitatiively better than the other two villages, added to it the small and suffcient household composition of the village.

***NOTE*—1.** Among the trees owned by the Saora villagers, the following are the most important economic trees, the products of which are partly meant for direct use and partly meant for sale to meet the contigencies, mohua (abaho), date palm (cindei jowa), tamarind (tintah), Karanjia (Karanjha), salap (arrah), mango (Udah jowa) and jackfruit (pansa) etc.

2. Among the variety of forest collections, besides, gathering some of the above mentioned trees products, they collect the following minor forest produce either for direct use or for sale: *barada saga* (barada jong), *Karadi* (Uruh koradah), mushroom (boteih), *Sialipatra* (rawah areng), *Siali* rope (rowah luar), *Pita konda* (godowai), *Chhata san* (alanjong), tubers (jawam), Khamba alu (sudan sai), Lac (sarriya laimb), firewood (area), flowers (tarah) etc.

TRIBAL & HARIJAN RESEARCH-*CUM*-TRAINING INSTITUTE, BHUBANESWAR

TRAINING COURSE ON TRIBAL ECONOMY, ECOLOGY AND DEVELOPMENT
(FROM FEBRUARY 17 TO 21, 1992)

Seminar Session

20-2-1992 (Thursday)

Session	10·00 A. M. to 2·00 P. M.
Theme	"Forest *Vis-a-Vis* Tribal Development" (*a*) Sedimentation and Environmental and Ecological hazards (*b*) Forest and Tribal development (*c*) Mico-prospectives of the changing frontiers of forest dependent economy-The Saora Experience. (*d*) Social Forestry Project, Orissa-A torch bearer
Course Director	Professor K. K. Mohanti, Ph. D., Director, T. H. R. T. I.
Chairman	Dr. N. Patnaik, Ph, D., Former Director, Tribal & Harijan Researh-*cum*-Training Institute, Bhubaneswar.
Paper Contributors	(1) Shri Dibakar Sahoo (2) Dr. N. Patnaik (3) Professor P. K. Nayak (4) Dr. C. R. Mohapatra
Guest Participants	(1) Professor K. Mohapatra, Director, A. T. D. C., Bhubaneswar. (2) Professor S. N. Ratha, Ph. D., Professor of Anthropology, Sambalpur University. Burla. (3) Shri G. B. Patnaik, I. A. S., Director, S. T. & S. C. Commission. Saheed Nagar, Bhubaneswar.
Participants	Trainee Officers of the training programme, Deputy Directors, Research Officers and Research Assistants of this Institute.
Chief Rapporteur	Shri A. K. Mohanty, Research Officer, T. H. R. T. I. Bhubaneswar.
Associate Rapporteurs	(1) Miss Hemanta Das, Research Assistant, THRTI, Bhubaneswar. (2) Shrimati Sarat Das, Research Assistant, TARTI, Bhubaneswar

Minutes of discussion :

The seminar was conducted at 10·00 A. M. in the class room of the institute. After welcoming the participants, Dr. K. K. Mohanti, the Director of this Institute and the Course Director spoke on the present training course sponsored by the Department of Forests, Environment and Wild Life, Government of India and highlighted the importance of training programme attended by Senior level Forest Officers drawn from Indian Forest, Service, who are actively involved in the forest management along with keeping the environmental balance as well as safeguarding the interest of the tribal people, the inhabitants in the forest

In course of his welcome speech, Professor Mohanti stressed the importance of the role of such Seniorlevel forest officers while they execute various forest programmes to safeguard the interest of the tribal folk, whose main economy depends on the surrounding forest. Tribal people and forest are inspeparable and the tribes have a symbiotic relationship with the forest. Professor Mohanti, emphasised on the conservation of forest along with in social change keeping in view the entitlement of the tribal population.

Shri Dibakar Sahu, in his paper on "Sedimentation—an environmental and ecological Hazards" pointed out various valid scientific reasons for large scale soil erosion due to formation of sediments on natural process. This causes water logging in different watershed complexes and catchment areas. The sedimentation of reservoirs and fertile valley lands has created various problems in keeping the balance of the environment. He pointed out, different natural phenomena causing such sedimentation which ultimately result in ecological imbalances.

Besides, human factors are also responsible for large scale soil denudation and deforestation. Many developmental programmes, like Engineering, Mining, Big Projects are also responsible for such sedimentation. The sediment contents of water reservoir over a few years in different rivers cause widespread flood. The formation of sediments is also due to climatic factors. Most important factor is precipitation. This, not only detaches the sediments from the land surface but acts as an agent of transportation. Secondly, the watershed factor is also responsible for formation of sediments.

The damage caused by sedimentation ar manifold, such as the coverage of fertile productive surface soil, by the sediments of sandy soil, damage to standing crop, chocking the drainage channels and changing the course of the water flows. Sedimentation also destroys the *flora* and *fauna* of the surroundings and cause innumerable loss to the natural growth of habitation. It directly affects the health condition in many areas.

Moreover, the formation of sediments causes serious hazards in tribal areas and it affects their health. Due to large scale shifting cultivation by the tribal people denudation takes place. Due to burning of the forest for slash and burn cultivation energy is lost in atmosphere and soil structure is disturbed. The top soil erodes and ulti mately the production falls. The tribal inhabitants finds difficult in its marginal living. Consequently, massive sedimentation in the upper strata of the river bed causes serious problem in the valleys and plains. Shri Sahu concluded his paper by suggesting various measures to check the shifting cultivation by providing alternate economic pursuit to the tribal people.

Dr. N. Patanaik, in his paper highlighted the unique expertise of tribal cultivators in their technological skills and soil management methods. Dr. Patnaik citing the example of Lanjia Saoras of Ganjam emphasised the unique skill in preparing terraced fields in the hill slopes of the agency area. The method and technology they show in preparing terraced fields with water management channels for irrigation purposes are highly commandable. It undoubtedly attracts any modern agricultural/soil conservation scientists. They not only prepare the terraced field for better production, they also help largely in checking the soil erosion by constructing stone bunding of each of the terraced field. Dr. Patnaik stressed the methods and technology adopted by SALT (Sloping Agricultural land Technology) which can bring more viable and developed method to protect the soil erosion process. Adoption of slopping Agricultural Land Technology, development of contour lines by planting crops with Leguminous shrubs, which protects the contour and side by side gives more production. Lastly, Dr. Patnaik Suggested that by maintaining a terraced land through SALT method one can build strong, permanent naturally green and beautiful terraces which will ultimately check the soil erosion and keep the environment balanced.

Professor, P. K. Nayak in his paper "Micro-Prospectives of the changing frontiers" has clearly, indicated the importance of forest in the context of tribal economy. Since the forest and tribals are inseparable developmental process should not debar the tribals from harnessing their economic pursuit from the surrounding forest. Though the shifting cultivation is a damaging process yet suitable alternative economic pursuits should be provided to the shifting cultivators before weaning them away from this practice. Professor Nayak pointed out from the hypothesis of a study conducted by him in three sadar villages in Chandragiri area of Ganjam district. The field study conducted in three villages have clearly indicated that the highest percentage of income is derived from the sale of firewood collected from the nearby forest. The income from firewood exceeds from the income from dry land and agriculture produces. Moreover, the households of a Sadar village who are landless their income is more from the sale of firewood than the other two villages who have got agriculture production from dry upland and Swidden. The income of the landless households is 57·88 per cent from the firewood whereas the income of other two villages is 57·37 per cent and 55·94 per cent respectively. Concluding his paper Professor Nayak suggested that the tribal people should be given agricultural land where the forest growth is denuded in order to provide them alternative economic pursuit for their living.

Dr. C. R. Mohapatra in his paper, "Social Forestry Project, Orissa—A torch bearer" has opined that the pace of tribal development during the post-independent period is rather slow. The tribal development through various developmental programmes is not satisfactory due to the apathetic attitude of the tribal towards developmental programmes and non-receptive psychology of the tribal-folk. More so the cause of deforestation has caused hardship to the tribes who mainly depeneds upon the forest for their subsistent economy. The recent thought of tribals development though executing social forestry in the tribal belts has come into force which has undoubtedly provided adequate income as well as previlege for getting wage for their livelihood. The 'social forestry programme started during the year 1983 with the financial assistance of swiss Government. The target was 5,000 villages in the first phase scattered over 9 districts. In spite of the successful programme in social forestry the response of the people was of a moderate degree. Dr. Mohapatra predicts in his paper that unless motivation and plantation go together the success would be remote. Since tribal and forest are interdependent, the field level workers of the forest department, like village Level Forest Workers, should be adequately trained to motivate the tribal people for social forestry programme and to create an atmosphere for involvement of the tribes men with the forest should be strongly built. He has a very optimistic hope that in the social forestry scheme the tribes have sincerely extended their co-operation and have involved themselves to raise the plantation and to raise nurseries in their private lands. In spite of limited resources and manpower Dr. Mohapatra is hopeful of making the social forestry programme a success.

Participating in the discussion Dr. J. K. Rawat pointed out that sedimentations are formed on the upper catchment of the watershed. Though the tribes in many pockets have technological know-how about the soil conservation measures due to limited resources and proper adjustment of technology, sufficient soil conservation measures are not possible. People inhabiting the upper strate of the catchment area should be given adequate training to avoid formation of sedimentation.

Mr. C. L. Goel and Mr. Samanta Singhar participating in the discussion opined that sufficient land should be given for social forestry to the tribal people and the tribal economy should be regarded in their prospective.

Dr. Mohapatra opined that unless the ownership of land is not legalised through revenue laws the involvement of the villagers in the social forestry programme will be difficult. Since, the Social forestry programme is a link scheme, various experiments are going on to attract the tribesmen and to involve them in the plantation programme. Along with the free patta, usufructuary rights are available for the tribal beneficiaries. Moreover, the villagers have been assigned to raise nursery to get better income from the programme.

Mr. Sundaram emphasize that the tribal people should be given ample scope for raising of seedlings and the plantation area should be handed over to Panchayats for better management.

Shri Gautam Dey, observed that species which are more favourite and accepted by the tribal people and which are suitable for agro-climatic conditions should be taken up in the social forestry scheme. Quick growing species which will fetch quick benefit to the tribes need be planted to make programme success. Herbal and medicinal plants should also be taken up.

Shri Rupinder Singh opined that in social forestry programme the involvement of the tribal people is a preorequisite for the sucess of the programme.

Shri Gopabandhu Patnaik observed that politics of development stands as a barrier in the process of developmental programmes. He emphasised that fast growing species should be taken up for plantation programme and restoration of land ownership over the plantation area should be given to the villagers so that the villagers can themselves protect the plantation area and involve themselves in the programme.

Dr. N. Patnaik, the Chairman of the seminar session in his concluding talk recited a very formidable and powerful verse quoting from the writings of Goswami TulasiDash, which denotes the five elements of nature, like soil, water, fire, sky and air which regulats the whole cosmos. This truth is well-versed and properly understood by the so called under developed tribal people than the so called modern elites. He pointed out that while he was moving with Mr. Gadgill in Utter Kannada area of Karnataka State recently he came across with a group of villagers who are tribes and who perfectly predict the natural phenomena through their experiences from the observarion of these five elements, like soil, water, fire, sky and air. He cited some examples of such predictions regarding changing natural processes. They practise very developed 42 varieties of paddy crops followed by developed method of irrigation potentiality with a socially heterogeneous life. Lastly, he concluded that we, the modern thinkers and planners should give much importance to the hidden knowledge of these unknown tribesmen and learn from their indigenous expertise.

The session was concluded with vote of thanks to the Chair, Course Director, Guest Speakers, Guest Participants, Training Participants and to the faculty members of the Institute.

COURSE ON TRIBAL ECONOMY, ECOLOGY AND DEVELOPMENT

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